

APPENDIX G
NATIONAL HISTORIC PRESERVATION
ACT CONSULTATION CORRESPONDENCE

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (AFGSC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

June 14, 2026

Colonel Jonathan A. Keller, USAF
Commander
1958 Scott Dr
Ellsworth AFB SD 57706-4710

Mr. RJ Hillman
Montana State Historic Preservation Office
P.O. Box 201201
Helena MT 59620

Dear Mr. Hillman

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, the Department of the Air Force (DAF) is preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental effects of addressing shortfalls in aircrew readiness in the Powder River Training Complex (PRTC). The PRTC is the training airspace used by aircrews at Ellsworth Air Force Base (AFB) and Minot AFB for day-to-day training and it is also used for Large Force Exercises (LFEs) a few times a year that bring together joint forces to participate in realistic combat training scenarios. The PRTC was originally established in 2015 and overlies parts of South Dakota, North Dakota, Wyoming, and Montana. The proposed action includes improvements to the airspace structure to address shortfalls in day-to-day training and increasing LFE capability to meet emerging threats to National Security.

Day-to-day training operations at PRTC are currently limited to or below Flight Level (FL) 260 (approximately 26,000 feet). This precludes training at higher altitudes, which is a necessity to accomplish certain flying missions. To improve day-to-day training, the DAF is proposing to raise the available altitude of some of the training airspace to FL600 (approximately 60,000 feet).

PRTC hosts LFEs, which include bomber aircraft assigned to Ellsworth and Minot AFBs, as well as fighter, surveillance, command/control, and refueling aircraft from units across the country. LFEs are designed to prepare servicemen and women for real-world scenarios. Longer duration exercises enable units to achieve complex realistic training. Longer durations also allow non-local units to meet multiple training requirements, justifying the cost of moving non-local units and their support equipment to participate in the exercises. Ellsworth AFB is currently authorized to host up to four LFEs annually (limited to 10 days per year with no more than 3 days per quarter) and the altitude for these events is also limited to or below FL260 (approximately 26,000 feet). These limitations (in duration and altitude) reduce the complexity for the LFE scenarios and deter non-local units from participating due to high mobilization effort and cost. The DAF is proposing to raise the altitude of the PRTC up to FL600 (approximately 60,000 feet) for LFEs and to increase the total LFE days to 30 days per year without a quarterly restriction. This modification would accommodate a 2-week LFE which would maximize complexity of the event and participation.

The DAF is requesting to continue consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, Protection of Historic Properties.

- WE ARE LONG-RANGE STRIKE -

The DAF has determined that the project is an undertaking pursuant to Section 106. The DAF received your concurrence with the Area of Potential Effects (APE) on August 5, 2025.

For this undertaking, DAF identified historic properties within the four states (and associated counties) within the APE. The historic properties include architectural resources, archaeological resources, and traditional cultural places (TCPs). The list was developed from databases of properties listed in or eligible for listing in the National Register of Historic Places (NRHP) as well as state registers of historic properties and National Historic Landmarks (NHLs).

As described in Attachment 1, given the existing avoidances for specific properties beneath PRTC, the short duration of the potential exposure to low-level overflights (noise and visual), no potential for structural damage, and the rarity of these events for any given point on the ground, there would be no adverse effect to non-NHL historic properties in accordance with 36 CFR 800.5(b).

With regards to NHLs, there would be no low-level overflights at six of the seven NHLs. While Medicine Rocks State Park has the potential to experience a low-level overflight during an LFE, as is the current situation, the probability of this occurring would still be relatively rare and as such would not result in an adverse effect pursuant to 36 CFR section 800.5(b).

The DAF invited 24 Tribes into Government-to-Government consultation concerning TCPs. There are three TCPs that do not have current avoidance measures. All of these are currently overflown during day-to-day operations and LFEs. The undertaking would not substantially change the existing environment and these places would continue to be rarely overflown at low-level. The associated noise from these overflights would not be at a level to cause structural damage, but their visual presence could be considered annoying to visitors or individuals participating in ceremonies. As is the current practice, Ellsworth AFB would establish temporary or seasonal avoidances for specific events or ceremonies if given notice by the Tribe(s).

Attached for your review is a detailed assessment of these effects that support the DAF's findings and determinations (Attachment 1). The DAF appreciates your concurrence with these determinations within 30 days of receipt of this letter. My point of contact for this project is Mr. John Carreiro, Cultural Resources Manager, who can be reached via email at john.carreiro@us.af.mil, phone at 605-385-2690, or mail at 28 CES/CIE, 2125 Scott Dr, Ellsworth AFB SD 57706. Please reach out if you have any questions or would like to discuss this project in more detail. I look forward to receiving any input you may have regarding this endeavor and our continued consultation. Thank you in advance for your assistance in this effort.

Sincerely

KELLER.JON
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JONATHAN A. KELLER, Colonel, USAF
 Commander

1 Attachment:
 Section 106 Assessment of Effects



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (AFGSC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA**

Colonel Jonathan A. Keller, USAF
Commander
1958 Scott Dr
Ellsworth AFB SD 57706-4710

Chairperson Durell Cooper
Apache Tribe of Oklahoma
511 E Colorado Dr
P.O. Box 1330
Anadarko, OK 73005

Dear Chairperson Cooper

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, the Department of the Air Force (DAF) is preparing an Environmental Impact Statement (EIS) to evaluate the potential environmental effects of addressing shortfalls in aircrew readiness in the Powder River Training Complex (PRTC). The PRTC is the training airspace used by aircrews at Ellsworth Air Force Base (AFB) and Minot AFB for day-to-day training and it is also used for Large Force Exercises (LFEs) a few times a year that bring together joint forces to participate in realistic combat training scenarios. The PRTC was originally established in 2015 and overlies parts of South Dakota, North Dakota, Wyoming, and Montana. The proposed action includes improvements to the airspace structure to address shortfalls in day-to-day training and increasing LFE capability to meet emerging threats to National Security.

Day-to-day training operations at PRTC are currently limited to or below Flight Level (FL) 260 (approximately 26,000 feet). This precludes training at higher altitudes, which is a necessity to accomplish certain flying missions. To improve day-to-day training, the DAF is proposing to raise the available altitude of some of the training airspace to FL600 (approximately 60,000 feet).

PRTC hosts LFEs, which include bomber aircraft assigned to Ellsworth and Minot AFBs, as well as fighter, surveillance, command/control, and refueling aircraft from units across the country. LFEs are designed to prepare servicemen and women for real-world scenarios. Longer duration exercises enable units to achieve complex realistic training. Longer durations also allow non-local units to meet multiple training requirements, justifying the cost of moving non-local units and their support equipment to participate in the exercises. Ellsworth AFB is currently authorized to host up to four LFEs annually (limited to 10 days per year with no more than 3 days per quarter) and the altitude for these events is also limited to or below FL260 (approximately 26,000 feet). These limitations (in duration and altitude) reduce the complexity for the LFE scenarios and deter non-local units from participating due to high mobilization effort and cost. The DAF is proposing to raise the altitude of the PRTC up to FL600 (approximately 60,000 feet) for LFEs and to increase the total LFE days to 30 days per year without a quarterly restriction. This modification would accommodate a 2-week LFE which would maximize complexity of the event and participation.

The DAF is requesting to continue consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, Protection of Historic Properties. The DAF previously reached out to you in July 2025 concurrent with publication of the Notice of Intent (NOI) to prepare the EIS. The DAF has determined that the project is an undertaking pursuant to Section 106.

For this undertaking, DAF identified historic properties within the four states (and associated counties) within the Area of Potential Effect (APE). The historic properties include architectural resources, archaeological resources, and traditional cultural places (TCPs). The list was developed from databases of properties listed in or eligible for listing in the National Register of Historic Places (NRHP) as well as state registers of historic properties and National Historic Landmarks (NHLs).

As described in Attachment 1, given the existing avoidances for specific properties beneath PRTC, the short duration of the potential exposure to low-level overflights (noise and visual), no potential for structural damage, and the rarity of these events for any given point on the ground, there would be no adverse effect to non-NHL historic properties in accordance with 36 CFR 800.5(b).

With regards to NHLs, there would be no low-level overflights at six of the seven NHLs. While Medicine Rocks State Park has the potential to experience a low-level overflight during an LFE, as is the current situation, the probability of this occurring would still be relatively rare and as such would not result in an adverse effect pursuant to 36 CFR section 800.5(b).

There are three known TCPs that do not have current avoidance measures. All of these are currently overflown during day-to-day operations and LFEs. The undertaking would not substantially change the existing environment and these places would continue to be rarely overflown at low-level. The associated noise from these overflights would not be at a level to cause structural damage, but their visual presence could be considered annoying to visitors or individuals participating in ceremonies. As is the current practice, Ellsworth AFB would establish temporary or seasonal avoidances for specific events or ceremonies if given notice by the Tribe.

Attached for your review is a detailed assessment of these effects that support the DAF's findings and determinations (Attachment 1). While there is no formal timeline for this consultation effort, we respectfully request you provide your comments or identify additional properties we should consider within 30 days of receipt of this letter to align with the mandated NEPA timeline. My point of contact for this project is Mr. John Carreiro, Cultural Resources Manager, who can be reached via email at john.carreiro@us.af.mil, phone at 605-385-2690, or mail at 28 CES/CIE, 2125 Scott Dr, Ellsworth AFB SD 57706. Please reach out if you have any questions or would like to discuss this project in more detail. I look forward to receiving any input you may have regarding this endeavor and our continued consultation. Thank you in advance for your assistance in this effort.

Sincerely

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JONATHAN A. KELLER, Colonel, USAF
Commander

1 Attachment:
Section 106 Assessment of Effects

**NATIONAL HISTORIC PRESERVATION ACT SECTION 106
CONSULTATION DOCUMENTATION
TO SUPPORT THE
ENVIRONMENTAL IMPACT STATEMENT FOR OPTIMIZATION OF
POWDER RIVER TRAINING COMPLEX
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA**

April 2026

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AGL	above ground level
APE	Area of Potential Effects
ATCAA	Air Traffic Control Assigned Airspaces
C.F.R.	Code of Federal Regulations
DAF	Department of the Air Force
dB	decibel
DoD	Department of Defense
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FL	flight level
LFE	Large Force Exercise
L _{max}	Maximum Sound Level
MOA	Military Operations Area
MSL	mean sea level
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Properties
psf	pounds per square foot
PR	Powder River
PRTC	Powder River Training Complex
ROD	Record of Decision
SHPO	State Historic Preservation Office
TCP	traditional cultural place
TTPs	Tactics, Techniques, and Procedures

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1.0 DESCRIPTION OF PROPOSED UNDERTAKING

The Powder River Training Complex (PRTC) is a group of Military Operations Areas (MOAs) and Air Traffic Control Assigned Airspaces (ATCAAs), which overlie parts of South Dakota, North Dakota, Wyoming, and Montana. Currently it is the day-to-day training complex (Monday through Friday) for aircrews operating B-1 aircraft from Ellsworth Air Force Base (AFB) and B-52 aircraft from Minot AFB. The PRTC also hosts Large Force Exercises (LFEs) which are discrete training events that bring together a variety of aircrews and support services from local and non-local units to train together simulating realistic combat missions.

The Department of the Air Force (DAF) is proposing to alleviate training shortfalls and address evolving training needs for aircrews by requesting that the Federal Aviation Administration (FAA) implement airspace modifications to the PRTC.

1.1 BACKGROUND

An appropriate training environment is required by the Department of Defense (DoD) National Defense Strategy. Each type of aircraft has a set of practices used by pilots to ensure effective, safe, and efficient operations known as Tactics, Techniques, and Procedures (TTPs). As the type and sophistication of threats to National Security have evolved, so has the National Defense Strategy, resulting in changes to aircraft capabilities and weapons systems. These advanced capabilities have led to changes in the TTPs, which in turn drive training requirements and the airspace needed to meet those requirements.

MOAs and ATCAAs are units of airspace with lateral and vertical limits that are designated to contain non-hazardous military flight activities. The vertical limits of MOAs can extend from ground level to 18,000 feet. ATCAAs exist from 18,000 feet up to a defined ceiling and are often associated with a MOA below.

The PRTC is comprised of several MOAs and ATCAAs used for day-to-day training and a few LFEs per year (**Figure 1.1-1**). All airspace shown on **Figure 1.1-1** can be used during LFEs. Day-to-day training is limited to Powder River (PR) 1, 2, 3, and 4 MOAs/ATCAAs and the Gateway West ATCAA. The PR MOAs are vertically segmented into a low and high MOA and include an ATCAA above. This provides a combined vertical training space from 500 feet above ground level (AGL) up to Flight Level (FL) 260 which is approximately 26,000 feet¹. The Gateway West and East ATCAAs do not have MOAs below and only provide vertical training space of FL180 to FL260, which is approximately 18,000 feet to 26,000 feet. See **Figure 1.1-2** for a three-dimensional view of the PRTC to see how these components vertically stack upon each other. The Gap MOAs and their associated ATCAAs are designed (and only activated) for LFEs, to provide larger contiguous airspace for these integrated exercises. Day-to-day these deactivated spaces provide corridors between the PR MOAs/ATCAAs for other air traffic to pass without conflicting with military training. **Table 1.1-1** provides the specific parameters of all the PRTC airspace components.

Day-to-day training operations and LFEs at PRTC are currently limited to or below FL260 (approximately 26,000 feet). This precludes training at higher altitudes, which is a necessity to accomplish certain flying missions. Additionally, LFEs are currently limited to 10 days per year and no more than 3 days per quarter. This short duration limits the complexity and effectiveness of these training events. These are the contributing factors to the existing shortfalls that are being addressed with the Proposed Action.

1.1.1 Establishment of PRTC and Consultation History

The establishment and use of the PRTC as it currently exists was evaluated in the *Environmental Impact Statement (EIS) for Powder River Training Complex* and implemented by a Record of Decision (ROD) signed in January 2015 (DAF 2015). National Historic Preservation Act (NHPA) Section 106 consultation for that effort was completed in 2014 prior to the ROD with all four State Historic Preservation Offices (SHPOs).

A Programmatic Agreement among Ellsworth AFB, the SHPOs of Montana, North Dakota, South Dakota, and Wyoming, and the Advisory Council on Historic Preservation was developed in 2015. The Agreement, which has since expired, outlined communication protocols and reporting requirements between the consulting parties, and stipulated certain avoidance, minimization, or mitigation of adverse effects. Ellsworth AFB has adhered to all mitigations identified in that Agreement despite expiration of the signed document. An updated Programmatic Agreement will be developed concurrently with the Section 106 consultation.

¹ Altitude references for aircraft operations are presented in several units of measure:

- Above ground level (AGL) references are usually used at lower altitudes (almost always below 5,000 feet), when clearance from terrain is more of a concern for aircraft operation.
- Mean sea level (MSL) altitudes are used in aviation when operating at or below 18,000 feet when clearance from terrain is less of a concern for aircraft operation.
- Flight Level (FL) is used to describe the cruising altitudes for aircraft traveling long distances above 18,000 feet. Flight Levels are given in hundreds of feet, e.g. FL300 is 30,000 feet.

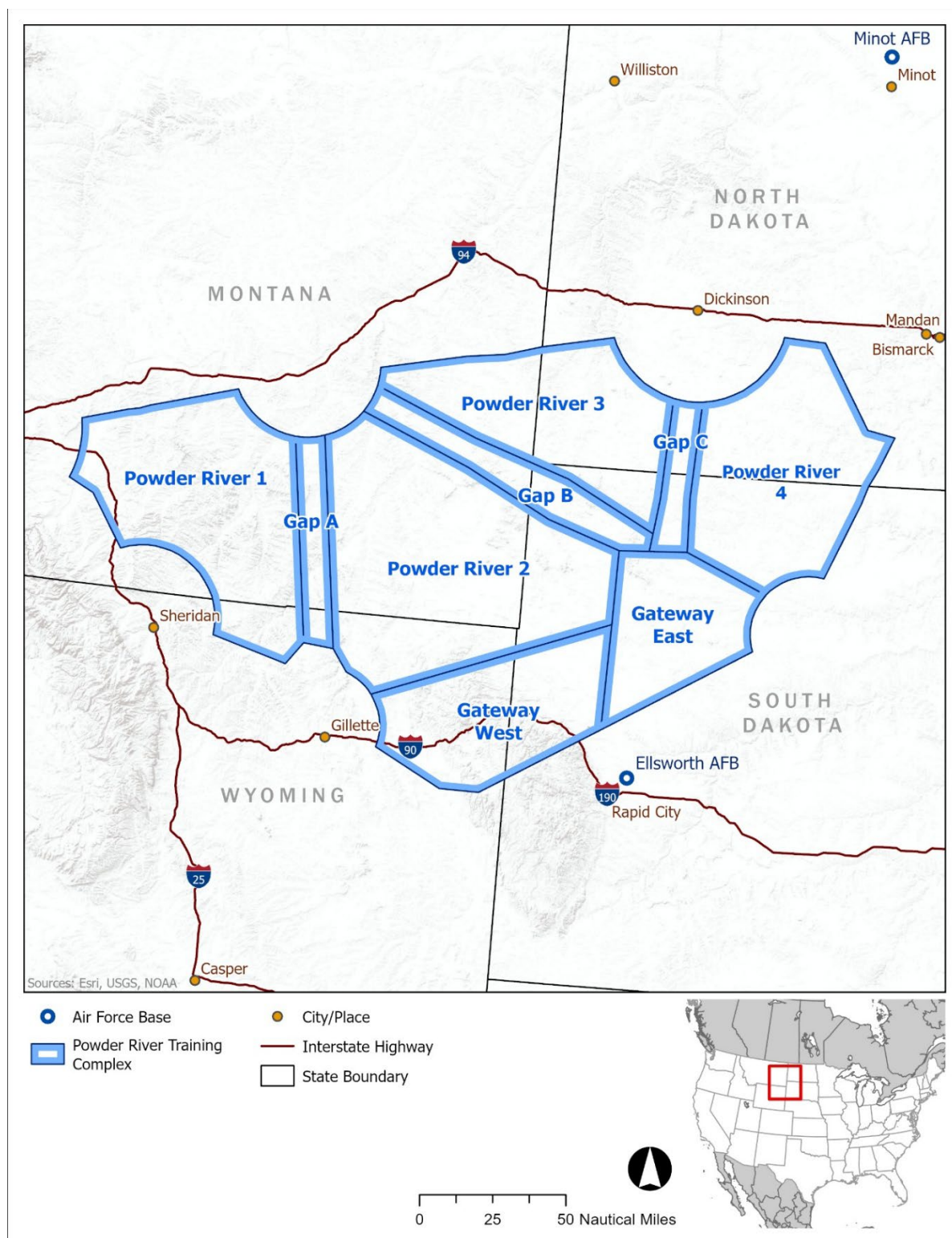


Figure 1.1-1 Powder River Training Complex Overview

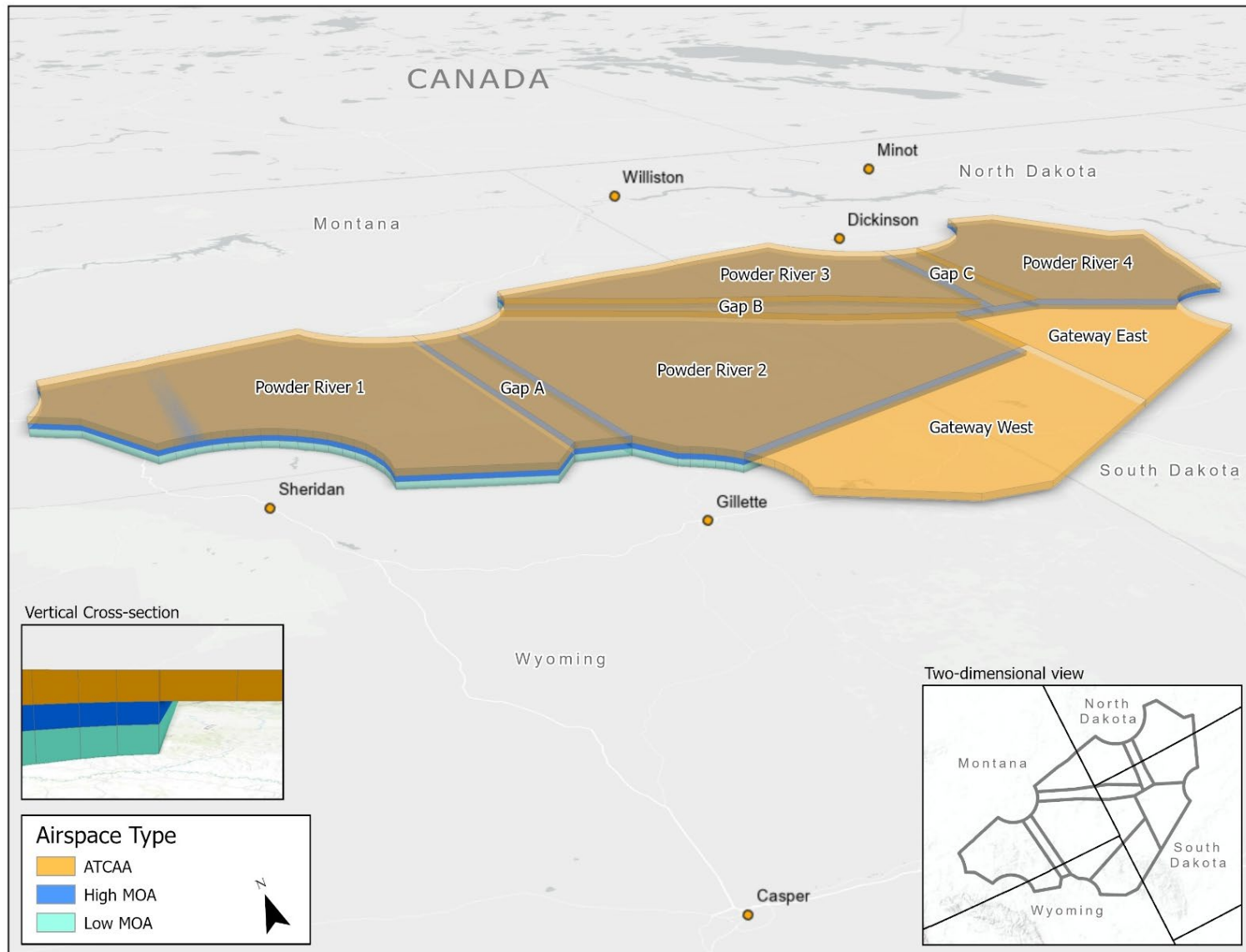


Figure 1.1-2 Powder River Training Complex – Three-dimensional View

Table 1.1-1 Existing Powder River Training Complex Airspace

Component	Availability	Floor/Ceiling
Powder River 1 (PR 1)¹		
PR 1 Low MOA	Day-to-day and LFE	500 AGL–12,000 MSL
PR 1 High MOA	Day-to-day and LFE	12,000 MSL–FL180
PR 1 ATCAA	Day-to-day and LFE	FL180–FL260
Powder River 2 (PR 2)		
PR 2 Low MOA	Day-to-day and LFE	500 AGL–12,000 MSL
PR 2 High MOA	Day-to-day and LFE	12,000 MSL–FL180
PR 2 ATCAA	Day-to-day and LFE	FL180–FL260
Powder River 3 (PR 3)		
PR 3 Low MOA	Day-to-day and LFE	500 AGL–12,000 MSL
PR 3 High MOA	Day-to-day and LFE	12,000 MSL–FL180
PR 3 ATCAA	Day-to-day and LFE	FL180–FL260
Powder River 4 (PR 4)		
PR 4 High MOA	Day-to-day and LFE	12,000 MSL–FL180
PR 4 ATCAA	Day-to-day and LFE	FL180–FL260
Gap A		
Gap A Low MOA	LFE only	500 AGL–12,000 MSL
Gap A High MOA	LFE only	12,000 MSL–FL180
Gap A ATCAA	LFE only	FL180–FL260
Gap B		
Gap B Low MOA	LFE only	500 AGL–12,000 MSL
Gap B High MOA	LFE only	12,000 MSL–FL180
Gap B ATCAA	LFE only	FL180–FL260
Gap C		
Gap C High MOA	LFE only	12,000 MSL–FL180
Gap C ATCAA	LFE only	FL180–FL260
Gateway East ATCAA	LFE only	FL180–FL260
Gateway West ATCAA	Day-to-day and LFE	FL180–FL260

Note: ¹ PR 1 is horizontally subdivided into four segments 1A, 1B, 1C, and 1D. Each of those segments is vertically divided into a low and high MOA with an ATCAA above, but the availability of those segments varies. The PR 1A and 1C High MOAs and ATCAAs are only available for LFEs.

Legend: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; LFE = Large Force Exercise; MOA = Military Operations Area; MSL = mean sea level; PR = Powder River

1.1.2 Existing Avoidances and Mitigation Measures

The current design of PRTC incorporates avoidances and mitigations that were implemented to reduce or eliminate the impact to other airspace users, historic properties, and Tribal land beneath the PRTC. These avoidances and mitigations are illustrated on **Figure 1.1-3** and would not change under this EIS Proposed Action:

- Large towns (population over 1,000) avoided by 2,000 feet AGL.
- Small towns (population over 100) avoided by 1,000 feet AGL.
- Northern Cheyenne Reservation (including Deer Medicine Rocks National Historic Landmark [NHL]) is excluded from the PR 1 Low MOA; thus, flights remain above 12,000 feet mean sea level (MSL) in the High MOA and ATCAA only.

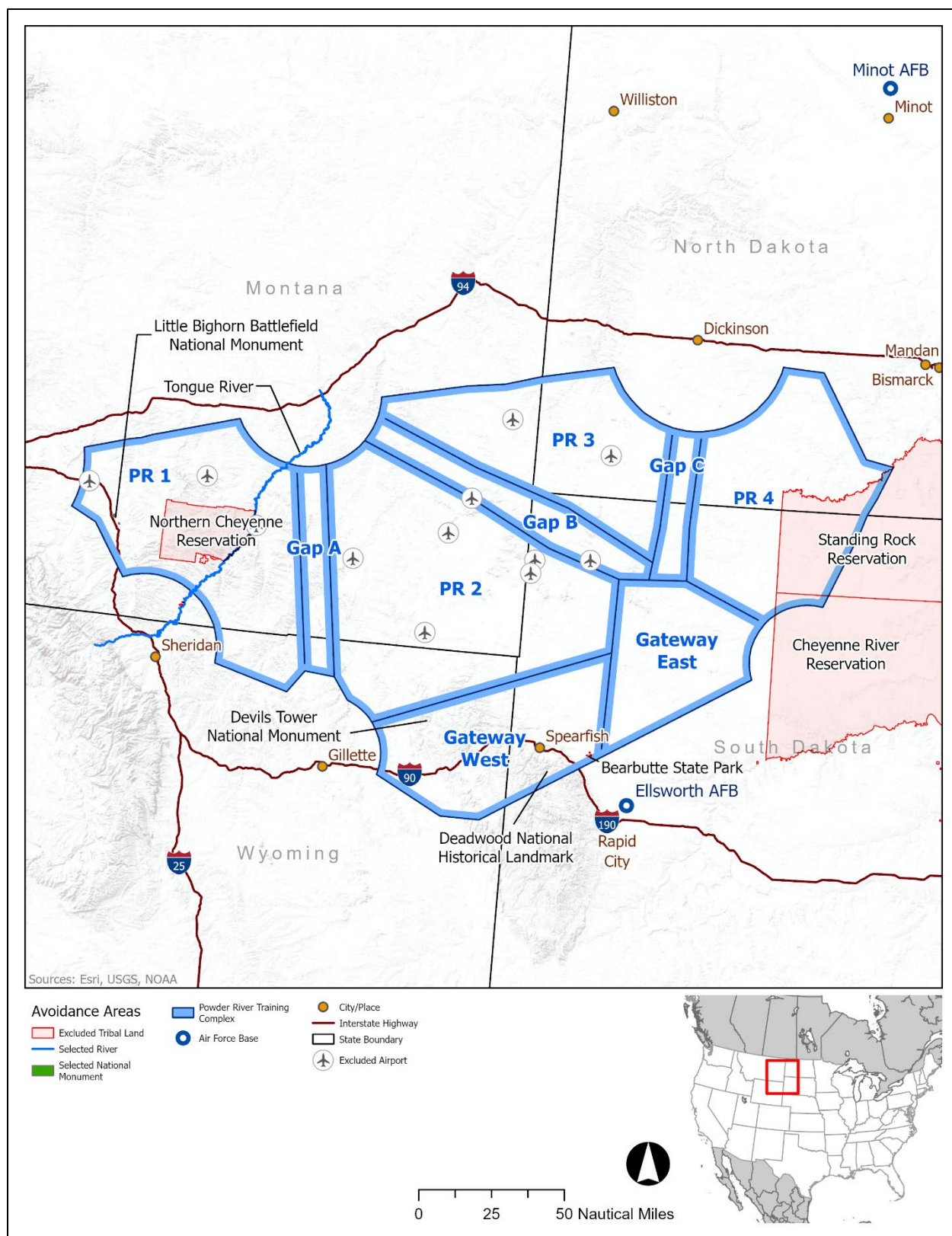


Figure 1.1-3 Existing Avoidance Areas

- Flights remain above 12,000 feet MSL above Cheyenne River Reservation and the Standing Rock Reservation (no PR 4 Low MOA; high MOA and ATCAA only).
- Little Bighorn Battlefield (beneath PR 1) is avoided by 5,000 feet AGL +/- 1 hour park hours.
- No supersonic flights over Little Bighorn Battlefield.
- Flights must cross perpendicularly to the Tongue River (traverses PR 1) (i.e., flight cannot follow the river valley to reduce visual and noise intrusion); the river was identified as an important area for the Tribes.
- Devils Tower National Monument, Deadwood NHL, and Bear Butte NHL are avoided by 18,000 feet. These properties are beneath Gateway West ATCAA (which has a floor of FL180 [approximately 18,000 feet]).

1.2 PROPOSED CHANGES TO PRTC

The DAF is proposing to address shortfalls in aircrew readiness by improving day-to-day training and increasing the capability of LFEs hosted at PRTC to meet emerging threats to National Security.

1.2.1 Changes to Day-to-Day Operations

Day-to-day training operations at PRTC are currently limited to or below FL260 (approximately 26,000 feet) as assessed in DAF 2015. This precludes training at higher altitudes, which is a necessity to accomplish certain flying missions. To improve day-to-day training, the DAF is proposing to raise the available altitude of some of the training airspace to FL600 (**Figure 1.2-1**). There would be no horizontal or vertical changes to any of the MOAs; the change for day-to-day training is limited to raising the ceiling of the ATCAAs. The existing total operations and types of day-to-day training within PRTC would not change, but those operations would be more vertically dispersed at higher altitude (**Table 1.2-1**). Most of the existing and proposed day-to-day training occurs in the ATCAAs (above FL180). Supersonic flight is not authorized for day-to-day training; thus, no sonic booms are possible on a day-to-day basis.

Table 1.2-1 Percentage of Day-to-Day Operations by Altitude Distribution

Operations	MOAs (500 feet AGL–FL180)	ATCAAs (above FL180)
Existing Operations (capped at FL260)	12%	88%
Proposed Operations (capped at FL600)	8%	92%
Delta	-4	4

Legend: % = percent; AGL = Above Ground Level; ATCAA = Air Traffic Control Assigned Airspaces; FL = Flight Level; MOA = Military Operations Area

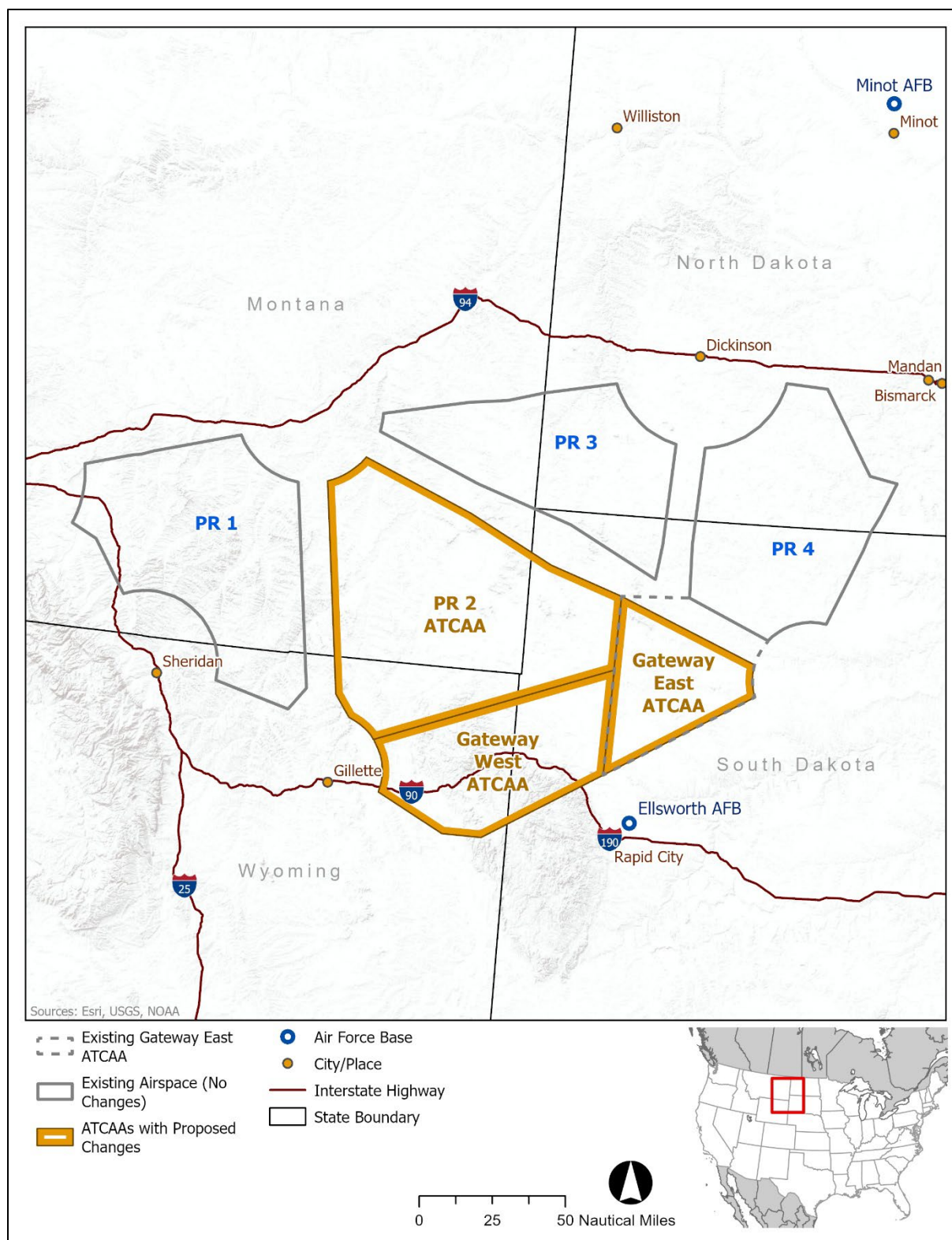


Figure 1.2-1 Proposed Changes for Day-to-Day Operations

1.2.2 Changes to LFEs

PRTC hosts LFEs, which include bomber aircraft assigned to Ellsworth and Minot AFBs, as well as fighter, surveillance, command/control, and refueling aircraft from units across the country. LFEs are designed to prepare servicemen and women for real-world scenarios. Longer duration exercises enable units to achieve complex realistic training. Longer durations also allow non-local units to meet multiple training requirements, justifying the cost of moving non-local units and their support equipment to participate in the exercises.

Ellsworth AFB is currently authorized to host up to four LFEs annually as assessed in DAF 2015. The 2015 ROD capped the PRTC altitude at or below FL260 and limited LFEs to 10 days per year (no more than 3 days per quarter). This limits the complexity for the LFE scenarios and also deters non-local units from participating due to high mobilization effort and cost. Supersonic flight in PRTC is only authorized during LFEs as assessed in DAF 2015. The current altitude limitations for supersonic flight would remain the same: fighter aircraft limited to above 10,000 feet AGL and bomber aircraft limited to above 20,000 feet MSL.

The DAF is proposing to raise the altitude up to FL600 (approximately 60,000 feet) across the entire PRTC for LFEs (**Figure 1.2-2**). This vertical expansion would create a more realistic and efficient training environment during LFEs. The Proposed Action also includes increasing the LFE days from 10 days total per year (no more than 3 per quarter) to a total of 30 days per year with no quarter restriction. This modification would accommodate LFEs that benefit from a longer duration. Under the Proposed Action, the PRTC would be able to support a 2-week LFE which would maximize participation. A 2-week LFE would include 5 weekdays of flying, no flying on Saturday or Sunday, followed by another 5 weekdays of flying. Non-local participants would get the most training for their invested time, effort, and money for a single event. A 2-week LFE would be the maximum or worst-case scenario for these events, most events would likely be shorter in duration.

Increasing the duration and total days of LFEs would increase annual operations within PRTC (**Table 1.2-2**). However, while the total annual operations would increase, the distribution of training across the PRTC and by altitude would remain relatively unchanged. Use of the high-altitude airspace would continue to account for approximately 90 percent of the training time (**Table 1.2-3**).

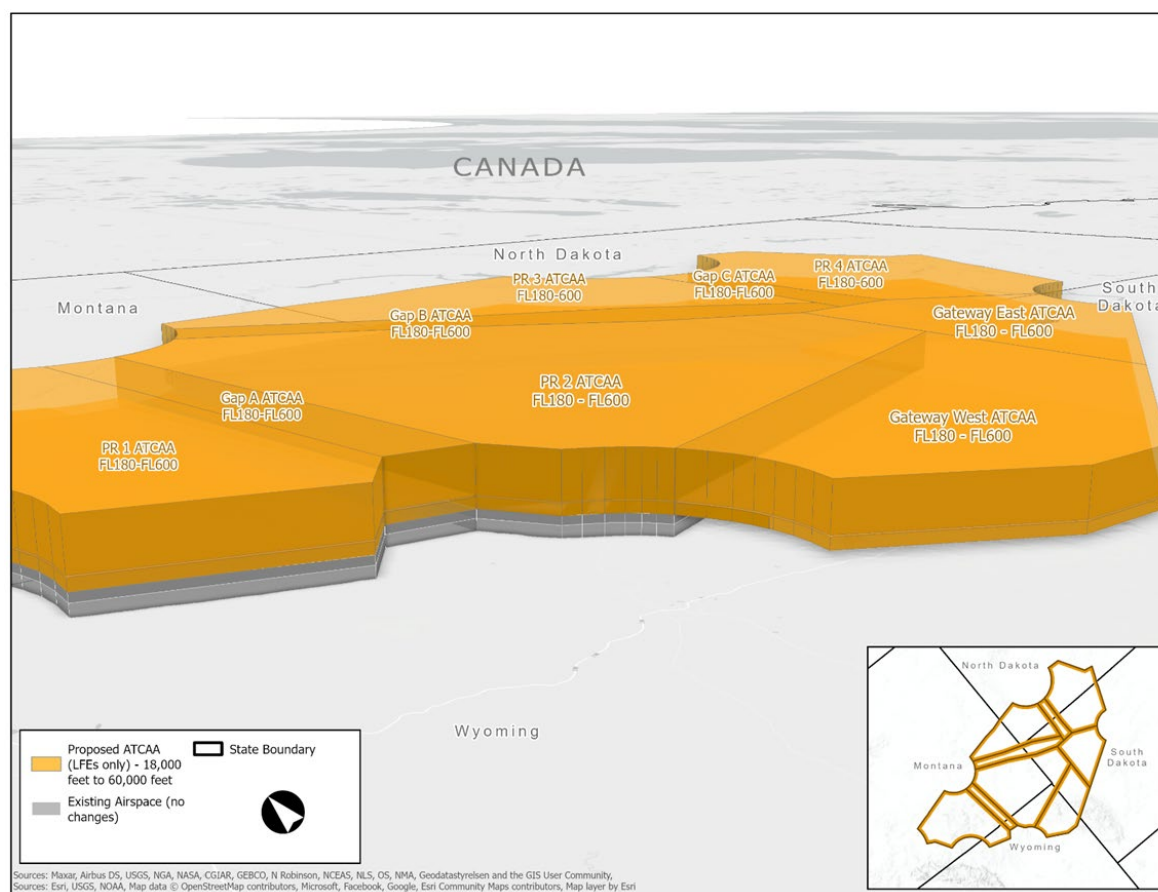


Figure 1.2-2 Proposed Altitude Increase for LFEs

Table 1.2-2 Proposed Increase in Sorties¹ Associated with LFEs

Aircraft Type	Existing Sorties ²	Proposed Increase in LFE Sorties	Total Annual Sorties
Bombers	3,039	120	3,159
Fighters	52	1,200	1,252
Other	143	420	563
Total	3,234	1,740	4,974

Notes: ¹ A sortie is the takeoff, mission, and landing of a single aircraft. Multiple sorties can occur at the same time throughout the PRTC.

² Existing sorties include those associated with day-to-day training and current LFEs. The sorties associated with day-to-day training would not change with this Proposed Action.

Legend: LFE = Large Force Exercise

Table 1.2-3 Percentage of LFE Operations by Altitude Distribution

Operations	MOAs (500 feet AGL–FL180)	ATCAAs (above FL180)
Existing Operations (capped at FL260)	12%	88%
Proposed Operations (capped at FL600)	7%	93%
Delta	-5	5

Legend: % = percent; ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; LFE = Large Force Exercise; MOA = Military Operations Area

During LFEs, the entire complex is used with opposing forces typically staging in PR 1 at one end and PR 4 at the other, then proceeding in general west to east and east and west direction and conducting combat mostly in the center of the complex. This results in primarily an elliptical area encompassing PR 2, PR 3, and Gap B where most supersonic speed occurs.

The authorized minimum altitudes would remain unchanged (10,000 feet AGL for fighters, 20,000 feet MSL for bombers). Supersonic speed does not occur for the duration of the flight, but rather a fraction of the time (approximately 30 seconds for fighters and up to 1 minute for bombers). Accommodating more fighter aircraft over more LFE days would increase the total supersonic sorties from the current LFE operations. Supersonic flight would not occur with every sortie and would vary depending on the training exercise being performed. Supersonic sorties by aircraft type are provided in **Table 1.2-4**. These sorties are not *in addition* to those presented in **Table 1.2-2**, but rather a subset of that total. As shown, approximately 95 percent of the supersonic activity would continue to be in the ATCAAs, above FL180.

Table 1.2-4 Supersonic Operations During LFEs

Aircraft Type	Supersonic Sorties		Time in MOAs (minutes/year)		Time in ATCAAs (minutes/year)	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Bombers (20,000 feet MSL and above)	60	180	0	0	15	45
Fighters (10,000 feet AGL and above)	100	1,500	2	750	46	14,250
Total	160	1,680	2	750	61	14,295

Legend: AGL = above ground level, ATCAA = Air Traffic Control Assigned Airspaces; LFE = Large Force Exercise; MOA = Military Operations Area; MSL = mean sea level

1.3 AREA OF POTENTIAL EFFECTS

The DAF has determined the Area of Potential Effects (APE) is the land beneath the PRTC as illustrated in **Figure 1.3-1**. The APE was provided to all SHPOs during scoping for the EIS (July 2025) and all provided their concurrence with the APE.



Figure 1.3-1 Area of Potential Effects

2.0 IDENTIFICATION OF HISTORIC PROPERTIES

For this undertaking, DAF identified historic properties within the four states (and associated counties) under the PRTC airspace. The historic properties include architectural resources, archaeological resources, and traditional cultural places (TCPs).

2.1 NATIONAL REGISTER PROPERTIES

Because the APE for this undertaking is the same as the APE under the 2014 EIS, DAF utilized the list of historic properties from the 2014 analysis as a starting point for the current effort. This list was verified for accuracy and supplemented with more recent information from databases of properties listed in or eligible for listing in the National Register of Historic Places (NRHP) as well as state registers of historic properties and NHLs. The comprehensive list of properties considered in the analysis, organized by state, can be found in **Enclosure A**.

The change in setting from low-level overflights and possible sonic booms could have an adverse effect pursuant to 36 Code of Federal Regulations (C.F.R.) section 800.5(d)(2) on NHLs. In accordance with 36 C.F.R. section 800.10, special requirements for protecting NHLs, the DAF

must, to the maximum extent possible, minimize harm to any NHL that may be directly and adversely affected by an undertaking (36 C.F.R. 800.10(a)). There are seven NHLs beneath PRTC: Deer Medicine Rocks (PR 1); Medicine Rocks State Park (Gap B/PR 3); Rosebud Battlefield/Where the Girl Saved Her Brother (just outside PR 1); Wolf Mountain Battlefields/Where Big Crow Walked Back and Forth which is along the Tongue River (PR 1); Bear Butte (Gateway West ATCAA); Deadwood Historic District (Gateway West); and Frawley Historic Ranch (Gateway West). These properties are illustrated on **Figure 2.1-1**. Most of these are associated with an existing avoidance area (see **Section 1.1.2**) or are beneath Gateway West ATCAA where flights would be above 18,000 feet.

2.2 TRADITIONAL CULTURAL PLACES

The DAF invited 24 Tribes into Government-to-Government consultation concerning the Proposed Action (**Table 2.2-1**). TCPs and other areas of cultural significance that were identified have been included in this assessment.

Table 2.2-1 PRTC Optimization EIS Tribal Consultation List

No.	Tribe Name
1	Apache Tribe of Oklahoma
2	Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, Montana
3	Black Feet Nation
4	Cheyenne and Arapaho Tribes
5	Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota
6	Chippewa Cree Indians of the Rocky Boy's Reservation, Montana
7	Confederated Salish and Kootenai Tribes of the Flathead Reservation
8	Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota
9	Crow Tribe of Montana
10	Eastern Shoshone Tribe (Shoshone Tribe of the Wind River Reservation)
11	Flandreau Santee Sioux Tribe of South Dakota
12	Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
13	Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota
14	Northern Arapaho
15	Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
16	Oglala Sioux Tribe
17	Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota
18	Shoshone-Bannock Tribes of the Fort Hall Reservation
19	Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota
20	Spirit Lake Tribe, North Dakota
21	Standing Rock Sioux Tribe of North and South Dakota
22	Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota
23	Turtle Mountain Band of Chippewa Indians of North Dakota
24	Yankton Sioux Tribe of South Dakota

Legend: EIS = Environmental Impact Statement; PRTC = Powder River Training Complex

Table 2.2-2 provides the known TCPs that were identified during the initial consultation to establish the PRTC or through research associated with this Proposed Action. Many of these locations are associated with existing avoidances within PRTC (see **Section 1.1.2**). Consultation with the Tribes will continue throughout development of the EIS.

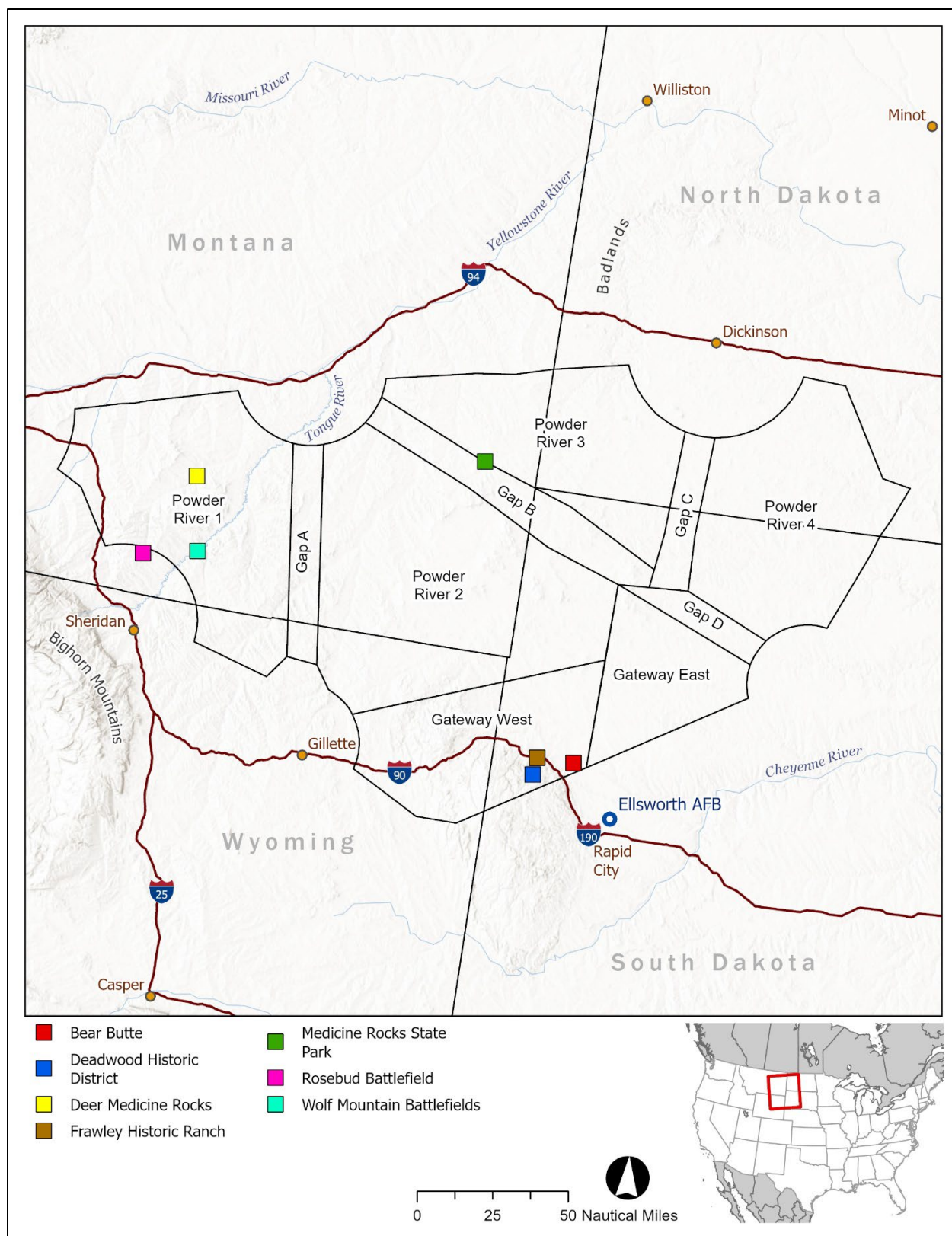


Figure 2.1-1 NHLs beneath PRTC

Table 2.2-2 Known TCPs Beneath PRTC

Area Name	General Location	Airspace
Wyoming		
Devils Tower National Monument ¹	Devils Tower	Gateway West ATCAA
Inyan Kara Mountain ¹	South of Sundance	Gateway West ATCAA
Unnamed 1 ¹	North of Gillette	Gateway West ATCAA
Unnamed 2	Northwest of Hulett	PR 2
Montana		
Chalk Buttes	Ekalaka	Gap B
Deer Medicine Rocks ^{1,2}	Lame Deer	PR 1
Medicine Rocks State Park ²	Ekalaka	PR 3/Gap B
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth National Historic Landmark ^{1,2}	Tongue River	PR 1
South Dakota		
Bear Butte National Historic Landmark ^{1,2}	Sturgis	Gateway West ATCAA

Notes: ¹ Indicates area with existing avoidance or located beneath ATCAA-only space with no low-level overflights.

² Also an NHL

Legend: ATCAA = Air Traffic Control Assigned Airspaces; PR = Powder River; PRTC = Powder River Training Complex; TCP = Traditional Cultural Place

3.0 DESCRIPTION OF EFFECTS ON HISTORIC PROPERTIES

Procedures for assessing effects to historic properties are discussed in 36 C.F.R. 800.5. An undertaking results in an adverse effect to a cultural resource listed on or eligible for listing in the NRHP when it alters the characteristics that qualify the resource for inclusion in the NRHP. Adverse effects are most often a result of physical destruction, damage, or alteration of a resource; alteration of the character of the surrounding environment that contributes to the resource's integrity; introduction of visual, audible, or atmospheric intrusions out of character with the resource or its setting; neglect of the resource resulting in its deterioration or destruction; or transfer, lease, or sale of the property out of federal ownership (36 C.F.R. 800.5(a)(2)).

3.1 SOURCES OF EFFECTS

In general, possible sources of adverse effects can include ground disturbance, vandalism, noise vibrations, visual intrusions, and change in land status that reduces legal protection. The proposed undertaking does not include any ground activities that would cause direct or indirect adverse effects to historic properties such as construction or demolition, clearing, grading, paving, utility installation, or earth moving. The potential for effects would result from aircraft noise, sonic booms resulting from supersonic flight, or visual intrusions from low-level overflights.

This analysis considers alterations in the setting of historic properties and potential alterations of feeling and association by users of these places from overflights. This assessment considered the frequency, density, duration of overflights, and their auditory and visual characteristics.

3.2 ASSESSMENT OF EFFECTS

Actions described in **Section 1.2.1** for day-to-day operations include raising the available altitude for day-to-day training which would not create new visual or noise intrusions within the APE. All existing avoidances established in the 2015 ROD to protect historic properties beneath PRTC would remain in place. Thus, this portion of the undertaking would have no adverse effect to historic properties.

Actions described in **Section 1.2.2** for LFEs may potentially affect historic properties. The elements warranting consideration for effects to historic properties include:

- Increasing the total sorties for LFEs would increase the potential for subsonic and supersonic noise intrusions.
- Increasing the annual total days for LFEs from 10 to 30 total would increase the potential for visual intrusions of low-level overflights during these events.

All existing avoidances established in the 2015 ROD to protect historic properties would remain in place and were considered in this assessment (see **Section 1.1.2** and **Figure 1.1-3**). For historic properties, those specifically include:

- The Northern Cheyenne Reservation (including Deer Medicine Rocks NHL) is excluded from the PR 1 Low MOA; thus, flights remain above 12,000 feet MSL (in the High MOA and ATCAA only).
- There is no PR 4 Low MOA and flights remain above 12,000 feet MSL (in the High MOA and ATCAA only) which excludes the Cheyenne River Reservation, the Standing Rock Reservation, and all historic properties from low-level overflights.
- The Little Bighorn Battlefield (beneath PR 1) is avoided by 5,000 feet AGL +/- 1 hour park hours.
- No supersonic flights authorized over the Little Bighorn National Monument (beneath PR 1).
- Flights must cross perpendicularly to the Tongue River (beneath PR 1).
- Devils Tower National Monument, Deadwood NHL, and Bear Butte NHL are beneath the Gateway West ATCAA; thus, all flights would be above FL180 (approximately 18,000 feet).

3.2.1 Noise Intrusion

There are two types of aircraft noise discussed in this assessment: subsonic noise and supersonic noise. Conventional subsonic noise is noise generated by an aircraft's engines and airframe. This is the most familiar form of aircraft noise. The unit used to measure the intensity of sound is the decibel (dB).

When an aircraft flies at supersonic speeds (faster than the speed of sound), shock waves are generated resulting in a sonic boom. The resulting sonic boom depends on the aircraft's size,

weight, geometry, flight altitude, speed, and type of maneuvering. Aircraft exceeding the speed of sound always create a sonic boom; however, not all supersonic flight activities will cause a boom audible at the ground. The altitude at which the shock wave is created determines the distance shock waves travel before reaching the ground and affects the intensity of the boom. The higher the aircraft, the greater the distance the shock wave must travel before reaching receptors on the ground, reducing the intensity of the boom. The intensity of a sonic boom is characterized as an overpressure which is the pressure above normal atmospheric pressure created by the shock wave and is reported in pounds per square foot (psf).

3.2.1.1 Subsonic Noise

Low-level overflights (those flights within the MOAs) have the potential to generate the most noise intrusion for an observer on the ground or disturb the setting for an historic property. **Table 3.2-1** provides the lowest altitude for each MOA. During LFEs, the entire PRTC is used so this table presents the spaces grouped together by lowest altitude. The Gateway East and West ATCAAs do not have associated MOAs; thus, no low-level overflights are possible in these airspaces since the floor begins at FL180 (approximately 18,000 feet). There are historic properties beneath the Gateway East and West ATCAAs but none of these properties would experience low-level overflight. Also provided in **Table 3.2-1** is the probability of experiencing an overflight at the lowest possible altitude during a week with an LFE. The Proposed Action would not change where low-level flights currently occur or the lowest possible altitude for any MOA; however, increasing the total LFE days would slightly increase the frequency and/or probability of experiencing a low-level flight during those events. LFEs would be limited to no more than 30 days annually. As shown, the probability of experiencing such an overflight would be rare.

Table 3.2-1 Lowest Altitude for MOAs in PRTC and Probability of Overflight

Airspace	Lowest Altitude (MOA Floor)	Probability of Overflight at Lowest Altitude ¹ (LFEs)
PR 1, 2, 3 and Gap A, B MOAs	500 feet AGL	2%
PR 4 and Gap C MOAs	12,000 feet MSL	11%

Note: ¹ Probability of experiencing a low-level overflight beneath the MOA during a week with an LFE.

Legend: % = percent; AGL = Above Ground Level; LFE = Large Force Exercise; MOA = Military Operations Area; MSL = Mean Sea Level; PRTC = Powder River Training Complex

Even in areas of the MOAs where no special flight restrictions apply (see **Section 1.1.2** and introduction to **Section 3.2** for existing avoidances), experiencing noise from an aircraft that is directly overhead at the lowest possible altitude would be rare. The following factors limit the frequency of exposure to low-altitude overflights within any MOA:

- Flight at low altitude requires an extreme level of vigilance on the part of the aircrew, and time spent at the lowest available altitude would be only as needed to accomplish low-altitude training requirements.

- Aircraft operating in MOAs do not fly at sustained low-level altitudes or along the MOA floor for extended periods of time but rather dip down to lower levels on rare occasions as part of larger training tactics and maneuvers.
- The MOAs in PRTC are very large and any particular location on the ground would be overflown at low altitudes relatively infrequently. Training within MOAs occurs randomly throughout the horizontal extent of the MOA.

From the ground, the sound level of an aircraft flying overhead changes continuously, starting at the ambient (background) level, increasing to a maximum as the aircraft passes closest to the receiver, and then decreasing to ambient as the aircraft flies into the distance. The noise metric used for the maximum or peak noise for aircraft is known as maximum sound level (L_{max}), which is reported in dB. During LFE events, low-level flights by both bombers and fighter aircraft are possible and a range of peak noise exposure could be experienced. **Table 3.2-2** provides the L_{max} for a representative set of bomber and fighter aircraft that would operate within PRTC during LFEs. This peak noise would occur for about 1/8 of a second. To provide a frame of reference and comparison, the average noise level for some common noise sources include: firecrackers (140 dB), a rock band concert (120 dB), a lawnmower (95 dB), a vacuum cleaner 10 feet away (85 dB), and a garbage disposal (75 dB).

Table 3.2-2 Peak Noise Exposure by Aircraft Types and Altitudes

Aircraft	500-foot Overflight (L_{max} in dB)	12,000-foot Overflight (L_{max} in dB)
B-1	117	86
B-2 ¹	n/a	71
B-52 ¹	n/a	76
F-16	115	78
EA-18	124	84
F-22	120	84
F-35	119	85

Note: ¹B-2 and B-52 do not fly at 500 feet.

Legend: dB = decibel; L_{max} = peak noise exposure; n/a = not applicable

Experimental data and models show that damage to architectural resources, including adobe buildings, is unlikely to be caused by subsonic noise and vibrations from aircraft overflights (Battis 1988; King 1985; King et al. 1988; Sutherland et al. 1990). Subsonic noise-related vibration damage to structures requires high dB levels generated at close proximity to the structures and in a low frequency range (Battis 1983, 1988; United States Forest Service 1992). Aircraft must generate a maximum sound level of at least 120 dB to potentially result in structural damage (Battis 1988) and, even at 130 dB, structural damage is unlikely. Sutherland et al. (1990) found that the probability of damage to a poorly constructed or poorly maintained wood frame building is less than 0.3 percent even when the building is directly under a large, high-speed aircraft flying only a few hundred feet above ground level. Conservatively, only sounds lasting more than 1 second above a sound level of 130 dB are potentially damaging to structural components (Committee on Hearing, Bioacoustics, and Biomechanics 1977). Peak

sound levels shown in **Table 3.2-2** would last for a fraction of a second and would not exceed this value. Given the existing avoidances for specific properties beneath PRTC, the short duration of the potential exposure, no potential for structural damage, and the rarity of these events for any given point on the ground, there would be no adverse effect to historic properties from subsonic noise in accordance with 36 C.F.R. 800.5(b).

3.2.1.2 *Supersonic Noise*

Supersonic flight is only authorized during LFEs. The potential for sonic booms would only be possible for a total of 30 days annually. As noted above, the intensity of a sonic boom is highly variable and depends on the aircraft's size, weight, geometry, flight altitude, speed, and type of maneuvering. Sonic booms could be described as ranging from the sound of distant thunder to a sharp double crack. For comparison and better understanding of psf, some common impulsive events and their associated psf are provided in **Table 3.2-3**. Sonic booms can be associated with structural damage. Most damage claims are for fragile or brittle objects, such as glass and plaster. There is a large degree of variability in damage experience, and much damage depends on the pre-existing condition of a structure as shown in **Table 3.2-4**.

Table 3.2-3 Typical Impulsive Event Overpressure

Peak Overpressure	Decibel	Example Noise Source
0.3 psf	117 dB	Distant thunder
2 psf	134 dB	Thunder resulting from lightning strikes at 1 kilometer
4 psf	140 dB	Car door slam from inside standard sedan with windows raised
5 psf	142 dB	Handgun at 1 meter
12 psf	149 dB	Fireworks display from viewing stand

Legend: dB = decibel; psf = pounds per square foot

Table 3.2-4 Potential Damage from Sonic Boom Overpressure

Sonic Boom Overpressure Nominal (psf)	Structural Element	Potential Type of Damage and Item(s) Affected
0.5–2 psf	Glass	Extension of existing crack; potential for failure for glass panes in bad repair; failure potential for existing good glass panes is less than 1 out of 10,000 at 2 psf.
	Ceiling Plaster	Fine cracks; extension of existing cracks; mostly from fragile areas.
	Wall Plaster	Fine cracks; extension of existing cracks less than in ceilings; over door frames; between some plasterboards; mostly from fragile areas.
	Roof	Older roofs may have slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole; new and modern roofs are rarely affected.
	Bric-a-brac	Those carefully balanced or on edges can fall; fine glass, such as large goblets, can fall and break.
2–4 psf	Glass	Glass pane failures may occur that are difficult to forecast in terms of the glass panes' existing localized condition. Nominally in good condition.
	Ceiling Plaster	Estimated rate of cracking ranges from less than 1 out of 5,000 (2 psf) to 1 out of 625 (4 psf).
	Wall Plaster	Estimated rate of cracking ranges from less than 1 out of 10,000 (2 psf) to 1 out of 1,000 (4 psf).
	Roof	Potential for nail peg failure if eroded.
	Bric-a-brac	Increased risk of tipping or falling objects.
4–10 psf	Glass	Regular failures within a large population of well-installed glass (1 out of 50 [10 psf] to 500 [4 psf]); failure potential industrial and greenhouse glass panes.
	Ceiling Plaster	Estimate rate of cracking ranges from 1 out of 526 (4 psf) to 1 out of 10 (10 psf). Potential for partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
	Wall Plaster	Estimated rate of cracking ranges from less than 1 out of 1,000 (4 psf) to 1 out of 50 (10 psf). Measurable movement of inside “party” walls at 10 psf.
	Roof	Regular failures within a large population of nominally good slate, slurry wash; some change of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
	Bric-a-brac	Increased risk of tipping or falling objects.
>10 psf	Glass	Some good glass will fail regularly (greater than 1 out of 10) to sonic booms and at an increased rate when the wavefront is normal to the glass pane. Glass with existing faults could shatter and fly. Large window frames move.
	Ceiling Plaster	Plasterboards displaced by nail popping.
	Wall Plaster	Most plaster affected. Internal “party” walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.
	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gale-end and will-plate cracks; rarely domestic chimneys dislodged if not in good condition.
	Bric-a-brac	Some nominally secure items can fall, e.g., large pictures, especially if fixed to “party” walls.

Legend: > = greater than; psf = pounds per square foot

Source: Haber and Nakaki 1989

Tests by the DAF on sonic booms have found that most structures in good condition are not affected by sonic booms with a peak overpressure of less than 16 psf. Tests by the National Aeronautics and Space Administration have shown that structures in good condition are undamaged by overpressures of up to 11 psf. Damage to plaster is in a comparable range of glass but depends on the condition of the plaster. Adobe faces risks similar to plaster, but assessment is complicated by adobe structures being exposed to weather, where they can deteriorate in the absence of any specific loads. Typical outdoor structures, such as buildings, windmills, radio towers, etc., are resilient and routinely subject to wind loads far in excess of sonic boom overpressures. In general, structural damage from sonic booms should be expected only for overpressures over 10 psf (Plotkin and Sutherland 1990).

Some prehistoric archaeological sites could contain natural structures such as rock shelters or caves, and petroglyphs or pictographs, which are etched or painted onto the rock surfaces. However, studies have found that these types of natural formations are not affected by noise vibrations, such as sonic booms, any more than by natural erosion, wind, or seismic activity (Battis 1983). A more recent study from 1999 analyzed sonic boom effects at four selected petroglyph/pictograph sites on Nellis Air Force Range and adjacent overflight lands (White and Orndorff 1999). Visual observation of the physical properties at each of these sites determined that the rock panel degradation was consistent with natural weathering and chemical alteration process and not the result of sonic booms (White and Orndorff 1999).

Supersonic flights of fighter aircraft could occur in MOAs (10,000 feet AGL and above) while supersonic flight of the B-1 would be limited to ATCAAs only (20,000 feet MSL). **Table 3.2-5** shows calculated overpressures in psf for the B-1 and representative transient fighter aircraft within PRTC. The intensity of sonic booms would vary as the altitude for supersonic flight would not all occur at the lowest possible altitude. The values in **Table 3.2-5** represent the maximum possible psf. Most sonic booms would average much less as they would occur in much higher altitudes. As shown in **Table 3.2-3**, these psf values would correlate to approximately 140–142 dB. As described in **Section 1.2.2**, supersonic flight would be concentrated in the center of the complex (PR 2, PR 3, and Gap B) and is less likely on the outer edges of the complex.

The types of structures most susceptible to sonic booms are glass and adobe or similar plaster-type materials. Historic standing structures within the lands beneath the affected airspace consist primarily of wood or log buildings with window glass and some adobe or earth block structures. Given the overpressure values shown in **Table 3.2-5**, the intensity of the sonic booms within PRTC and the infrequency and the random nature of the sonic booms suggest that structural damage to historic structures would be unlikely. Given the existing avoidances for specific properties beneath PRTC and the assessment above, there would be no adverse effect to historic properties from supersonic noise in accordance with 36 C.F.R. 800.5(b).

Table 3.2-5 Maximum Sonic Boom Overpressures

Aircraft	Lowest Supersonic Flight Altitude	Overpressure (psf) ¹
B-1	20,000 feet MSL	5.31
F-16	10,000 feet AGL	4.24
F-22	10,000 feet AGL	5.37
F-35	10,000 feet AGL	4.9

Note: ¹ Assumes straight and level flight at Mach 1.2 speed.

Legend: AGL = above ground level; MSL = mean sea level; psf = pounds per square foot

3.2.2 Visual Intrusion

Low-level overflights have the potential to generate temporary visual intrusions for an observer on the ground or disturb the visual setting for an historic property. Individuals visiting a property could see the visual intrusion as an annoyance and an impact upon the value of the historic or cultural site. As shown in **Table 3.2-1**, low-level overflights would continue to be possible throughout the PRTC during LFEs; however, the probability of experiencing such an overflight would continue to be rare.

Visibility depends on the distance between the aircraft and the viewer. **Figure 3.2-1** presents the visual effect of a representative bomber and fighter aircraft to an observer at a spot under the airspace. The typical person has focused vision within an area represented by a 45- to 60-degree cone. Using a 55-degree cone of focused vision for this analysis, a 146-foot-long B-1, flying at 12,000 feet, would occupy only approximately 0.03 percent of the horizontal plane of that cone of vision. At 18,000 feet, it would occupy approximately 0.01 percent. Fighter aircraft, such as the F-16, are substantially smaller but flying lower would occupy approximately 0.38 percent of the horizontal plane cone of vision. Visibility is also affected by intervening objects such as landforms, vegetation, or structures that block the viewer from seeing the aircraft, particularly when aircraft are traveling at lower altitudes. Based on this analysis and limited amount of time an aircraft would be visible, temporary visual intrusion caused by transit of the training aircraft would not be expected to diminish the qualities of any cultural resources.

Viewer response and interpretation of aircraft overflight would vary. Depending upon cultural and instinctual perceptions of danger and sensitivity of the presence of an overflight, visual effects of overflights may have an indirect impact on qualities valued by an individual. During tribal ceremonies, overflights at any altitude could be seen as an unwelcome visual intrusion.

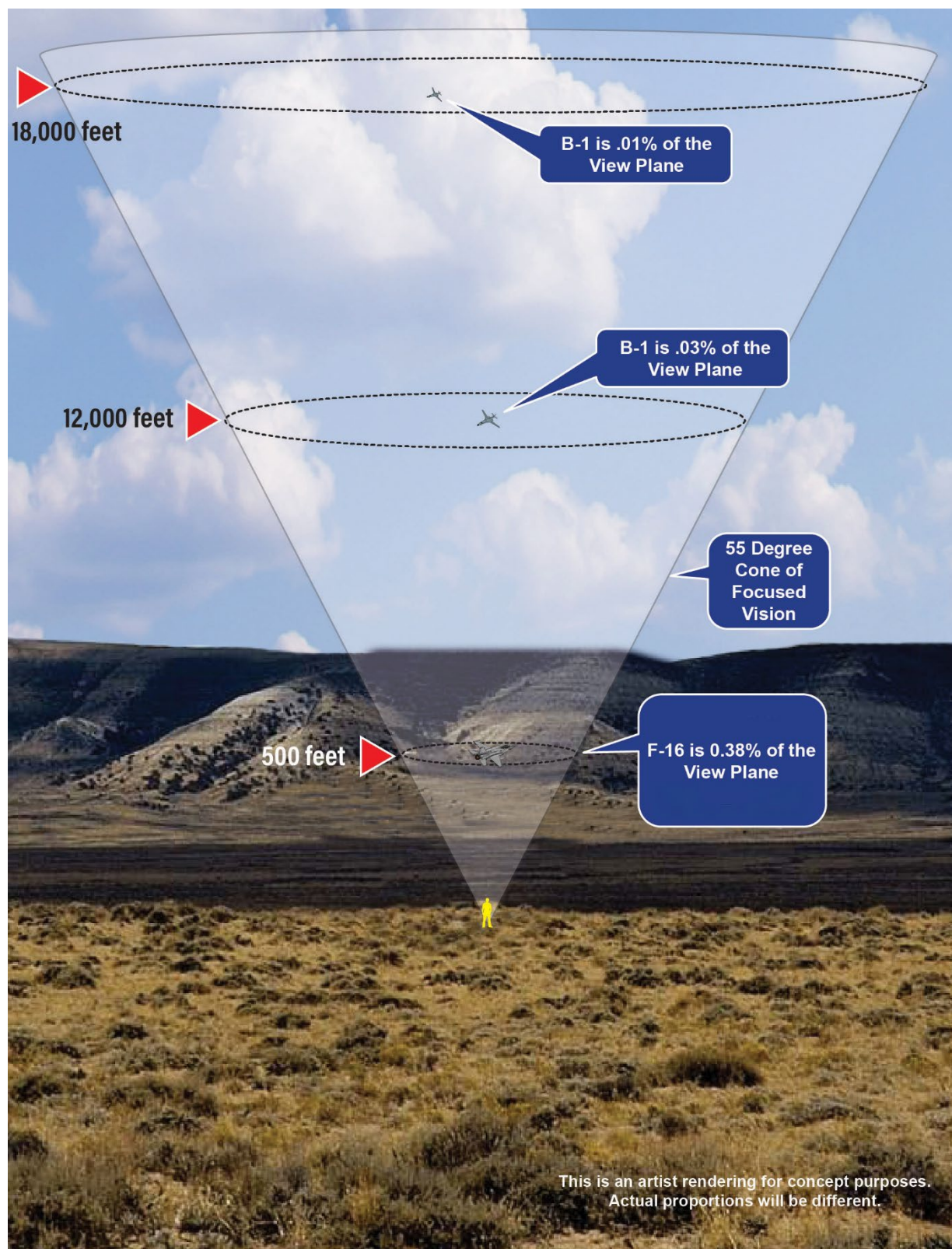


Figure 3.2-1 Visual Perspective of Bomber and Fighter Aircraft at Various Altitudes

Overall, increasing the total LFE days would slightly increase the frequency and/or probability of experiencing a low-level overflight during those events in the PRTC; however, the probability of experiencing an overflight at the lowest possible altitude would continue to be rare. Visual effects to any overflowed historic property would be sporadic and temporary, given the infrequency of flights, the speed of the aircraft in transit, the size of the PRTC, and the dispersal of historic properties. The overflights would not result in any physical changes to the visual setting of underlying lands and have no potential to change the visual or aesthetic quality of any landscape. As described in **Section 1.1.2**, several avoidances or mitigation measures were incorporated into the PRTC structure and would remain in place. As such, there would be no adverse effect to historic properties from visual intrusion in accordance with 36 C.F.R. 800.5(b).

3.3 SUMMARY OF EFFECTS ASSESSMENT

Given the existing avoidances for specific properties beneath PRTC, the short duration of the potential exposure to low-level overflights (noise and visual), no potential for structural damage, and the rarity of these events for any given point on the ground, there would be no adverse effect to historic properties in accordance with 36 C.F.R. 800.5(b).

With regards to NHLs, there would be no low-level overflights at six of the seven NHLs given the existing avoidance areas, the location of the NHL beneath ATCAA-only airspace, or the location is just outside the MOA boundary. While Medicine Rocks State Park, beneath Gap B and PR 3, has the potential to experience a low-level overflight during an LFE, as is the current situation, the probability of this occurring would still be relatively rare (about 2 percent during an LFE week) and as such would not result in an adverse effect pursuant to 36 C.F.R. section 800.5(b).

The DAF invited 24 Tribes into Government-to-Government consultation concerning TCPs. There are three places that do not have current avoidance measures: “Unnamed 2” in Wyoming beneath PR 2; Medicine Rocks State Park in Montana beneath PR 3 and Gap B; and Chalk Buttes in Montana beneath Gap B. All of these places are currently overflowed during day-to-day operations and LFEs. The Undertaking would not substantially change the existing environment and these places would continue to be rarely overflowed at low-level. The associated noise from these overflights would not be at a level to cause structural damage, but their visual presence could be considered annoying to visitors or individuals participating in ceremonies. As is the current practice, Ellsworth AFB would establish temporary or seasonal avoidances for specific events or ceremonies if given notice by the Tribe(s).

The DAF recognizes there are likely numerous resources that have not been evaluated or identified beneath PRTC; however, given that no adverse effect would occur to NRHP-listed or eligible properties, the same conclusion could be made for those additional resources.

4.0 MEASURES TO AVOID, MINIMIZE, OR MITIGATE ADVERSE EFFECTS

The existing avoidances developed during the initial establishment and operation of the PRTC (see **Section 1.1.2**) would remain in place. Based on the assessment presented in this documentation, there are no additional mitigation measures necessary to protect historic properties beneath PRTC. Ellsworth AFB would continue to establish temporary or seasonal avoidances for specific ceremonies and events requested by the Tribes, if given sufficient notice.

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ENCLOSURE A – IDENTIFICATION OF HISTORIC PROPERTIES

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Table A-1. Historic Properties Under PRTC Airspace

Property Name	General Location (County/Town)	Airspace
Montana		
Airport Site 24-RB-0	Rosebud/Birney	PR 1
Amid Creek Site 24-RB-249	Rosebud/Birney	PR 1
Archaeological Site 24-BH-288	Rosebud/City Unavailable	PR 1
Archaeological Site 24-BH-1030	Big Horn/ City Unavailable	PR 1
Archaeological Site 24-BH-1058	Big Horn/ City Unavailable	PR 1
Archaeological Site 24-BH-19494	Big Horn/ City Unavailable	PR 1
Archaeological Site 24-BH-1975	Big Horn/ City Unavailable	PR 1
Archaeological Site 24-BH-307	Big Horn/ City Unavailable	PR 1
Archaeological Site 24-BH-950	Big Horn/ City Unavailable	PR 1
Archaeological Site 24-BH-1001	Big Horn/ City Unavailable	PR 1
Archeological Site 24-PR-26	Powder River/Ashland	PR 1
Archeological Site 24-PR-36	Powder River/Ashland	PR 1
Archeological Site 24-PR-37	Powder River/Ashland	PR 1
Archeological Site 24-PR-39	Powder River/Ashland	PR 1
Archeological Site 24-PR-43	Powder River/Ashland	PR 1
Archeological Site 24-PR-48	Powder River/Ashland	PR 1
Archeological Site 24-PR-484	Powder River/Ashland	PR 1
Archeological Site 24-PR-486	Powder River/Ashland	PR 1
Archeological Site 24-PR-489	Powder River/Ashland	PR 1
Archeological Site 24-PR-493	Powder River/Ashland	PR 1
Archeological Site 24-PR-495	Powder River/Ashland	PR 1
Archeological Site 24-PR-496	Powder River/Ashland	PR 1
Archeological Site 24-PR-497	Powder River/Ashland	PR 1
Archeological Site 24-PR-498	Powder River/Ashland	PR 1
Archeological Site 24-PR-499	Powder River/Ashland	PR 1
Archeological Site 24-PR-55	Powder River/Ashland	PR 1
Archeological Site 24-PR-552	Powder River/Ashland	PR 1
Archeological Site 24-PR-563	Powder River/Ashland	PR 1
Archeological Site 24-PR-564	Powder River/Ashland	PR 1
Archeological Site 24-PR-565	Powder River/Ashland	PR 1
Archeological Site 24-PR-566	Powder River/Ashland	PR 1
Archeological Site 24-PR-568	Powder River/Ashland	PR 1
Archeological Site 24-PR-570	Powder River/Ashland	PR 1
Archeological Site 24-PR-573	Powder River/Ashland	PR 1
Archeological Site 24-PR-580	Powder River/Ashland	PR 1
Archeological Site 24-PR-583	Powder River/Ashland	PR 1
Archeological Site 24-PR-587	Powder River/Ashland	PR 1
Archeological Site 24-PR-588	Powder River/Ashland	PR 1
Archeological Site 24-PR-591	Powder River/Ashland	PR 1
Archeological Site 24-PR-593	Powder River/Ashland	PR 1
Archeological Site 24-PR-596	Powder River/Ashland	PR 1
Archeological Site 24-PR-597	Powder River/Ashland	PR 1
Archeological Site 24-PR-599	Powder River/Ashland	PR 1
Archeological Site 24-PR-678	Powder River/Ashland	PR 1
Archeological Site 24-PR-683	Powder River/Ashland	PR 1
Archeological Site 24-PR-686	Powder River/Ashland	PR 1
Archeological Site 24-PR-688	Powder River/Ashland	PR 1
Archeological Site 24-PR-697	Powder River/Ashland	PR 1
Archeological Site 24-RB-86	Powder River/Ashland	PR 1

Property Name	General Location (County/Town)	Airspace
Autumn View Site 24-RB-251	Rosebud/Birney	PR 1
Baker Hotel	Fallon/Baker	PR 3
Baldwin House	Big Horn/ Lodge Grass	PR 1
Bones Brothers Ranch	Rosebud/Birney	Gateway West
Boyum, John, House	Big Horn/ Hardin	PR 1
Bright Cloud Site	Rosebud/Birney	PR 1
Broken Tire Site 24-RB-217	Rosebud/Birney	PR 1
Burke, Thomas H., House	Big Horn/ Hardin	PR 1
Byers/Schaudel Homestead 24-RB-153	Rosebud/City Unavailable	PR 1
Cammock's Hotel	Big Horn/Lodge Grass	PR 1
Castle Rock Post Office 24-RB-335	Rosebud/Colstrip	PR 1
Cheever-Cain Ranch	Powder River/ Otter	PR 1
Chalk Buttes ⁴	Carter/Ekalaka	Gap B
Chivers Memorial Church	Big Horn/Lodge Grass	PR 1
Commercial District	Big Horn/Hardin	PR 1
Cooley Place 24-RB-1064	Rosebud/Colstrip	PR 1
Cotant/Scott Site 24-RB-158	Rosebud/City Unavailable	PR 1
Cottonwood Creek Bridge ²	Fallon/ Ismay	PR 3
Cross Ranch Headquarters	Powder River/ Broadus	PR 2
Crying Hawk	Rosebud/Colstrip	PR 1
Deer Medicine Rocks ^{1, 4}	Rosebud/Lame Deer	PR 1
Doc Taylor Place 24-RB-1065	Rosebud/Colstrip	PR 1
Drew, J.W., Grain Elevator	Big Horn/Lodge Grass	PR 1
Ebeling, William, House	Big Horn/Hardin	PR 1
Eder, Charles S. House	Big Horn/Hardin	PR 1
Ellison's Rock Site 24-RB-1020	Rosebud/Colstrip	PR 1
Engineer's Shelter	Rosebud/Colstrip	PR 1
Fadhl Homestead Site	Rosebud/Colstrip	PR 1
Fallon County Jail	Fallon/ Baker	PR 3
Farley Lookout Site 24-RB-1053K	Rosebud/Colstrip	PR 1
Fenceline Site	Rosebud/Ashland	PR 1
First Baptist Church	Big Horn/Hardin	PR 1
First National Bank of Ekalaka and Rickard Hardware Store Building	Carter/Ekalaka	Gap B
Haverfield Hospital	Big Horn/Hardin	PR 1
Head Chief-Young Mule Charge ³	Rosebud/Lame Deer	PR 1
Insite 24-RB-874	Rosebud/Colstrip	PR 1
Inventory Site #31	Rosebud/Colstrip	PR 1
Iron Graveyard Site 24-RB-248	Rosebud/Ashland	PR 1
Ismay Jail	Custer/ Ismay	PR 3
Jamies Site	Rosebud/Ashland	PR 1
Jud McKelvery Homestead 24-RB-155	Rosebud/City Unavailable	PR 1
Karl Knoblock Homestead 24-RB-168	Rosebud/City Unavailable	PR 1
Katydid Site 24-RB-226	Rosebud/Birney	PR 1
King Creek Site 24-RB-221	Rosebud/Ashland	PR 1
Kopriva, Francis, House	Big Horn/Hardin	PR 1
Lithic City Site 24-FA-45	Fallon/City Unavailable	PR 3
Little Big Horn River Bridge ²	Big Horn	PR 1
Little Bighorn Battlefield National Monument	Big Horn/Garryowen	PR 1
Little Bone Site 24-RB-233	Rosebud/Ashland	PR 1
Lodge Grass City Jail	Big Horn/Lodge Grass	PR 1

Property Name	General Location (County/Town)	Airspace
Lodge Grass Creek Bridge ²	Big Horn/Lodge Grass	PR 1
Lodge Grass Merchandise Company Store	Big Horn/Lodge Grass	PR 1
Lookout Point Site & Petroglyph	Rosebud/Colstrip	PR 1
Lost Grave Site 24-RB-228	Rosebud/Ashland	PR 1
Medicine Rocks State Park ^{1,2,3,4}	Carter/Ekalaka	PR 2
Milwaukee Railroad ²	Rosebud County	PR 1
Moncure Tipi	Big Horn/Busby	PR 1
Mud Turtle Spring Site 24-PR-628	Powder River/near Ashland	PR 1
Muskrat Homestead 24-RB-887	Rosebud/Colstrip	PR 1
O'Dell Bison Jump Site 24-RB-234	Rosebud/Ashland	PR 1
O'Fallon Creek Bridge	Custer/Ismay	PR 3
OW Ranch ³	Big Horn/Decker	PR 1
Owl Creek Site	Big Horn/near Lodge Grass	PR 1
Pease's, George, Second Store	Big Horn/Lodge Grass	PR 1
Ping, J.J. House	Big Horn/Hardin	PR 1
Poker Jim Butte Fire Lookout	Rosebud/Birney	PR 1
Power Quarry Site 24-RB-479	Rosebud/Colstrip	PR 1
Pyramid Mountain	Rosebud/Colstrip	PR 1
Reno Apartments	Big Horn/Hardin	PR 1
Reservoir Creek Homestead ²	Powder River	PR 1, Gap A, or PR 2
Residential District	Big Horn/Hardin	PR 1
Reynold's Battlefield Historic District	Powder River/Moorehead	Gap A
Roof of the Tongue Site 24-RB-211	Rosebud/Ashland	PR 1
Rosebud Battlefield –Where the Girl Saved Her Brother ^{1,2}	Big Horn/Kirby	PR 1
Ryan's, John, House	Big Horn/Lodge Grass	PR 1
Sandrock Bison Kill	Rosebud/Colstrip	PR 1
Scatter Site 24-RB-212	Rosebud/Ashland	PR 1
Sharp's, Jay, Store	Big Horn/Lodge Grass	PR 1
Simmonsens's House	Big Horn/Lodge Grass	PR 1
Site 24-BH-1045	Big Horn/City Unavailable	PR 1
Site 24-BH-1046	Big Horn/City Unavailable	PR 1
Site 24-BH-1052	Big Horn/City Unavailable	PR 1
Site 24-BH-1583	Big Horn/City Unavailable	PR 1
Site 24-BH-1589	Big Horn/City Unavailable	PR 1
Site 24-BH-1591	Big Horn/City Unavailable	PR 1
Site 24-BH-1593	Big Horn/City Unavailable	PR 1
Site 24-BH-1595	Big Horn/City Unavailable	PR 1
Site 24-BH-1595	Big Horn/City Unavailable	PR 1
Site 24-BH-1597	Big Horn/City Unavailable	PR 1
Site 24-BH-1602	Big Horn/City Unavailable	PR 1
Site 24-BH-1606	Big Horn/City Unavailable	PR 1
Site 24-BH-1609	Big Horn/City Unavailable	PR 1
Site 24-BH-1610	Big Horn/City Unavailable	PR 1
Site 24-BH-1614	Big Horn/City Unavailable	PR 1
Site 24-BH-1618	Big Horn/City Unavailable	PR 1
Site 24-BH-1619	Big Horn/City Unavailable	PR 1
Site 24-CR-277	Custer/City Unavailable	PR 1, Gap A, PR 2, Gap B, or PR 3
Site 24-FA-39	Fallon/City Unavailable	PR 3
Site 24-FA-48	Fallon/City Unavailable	PR 3
Site 24-FA-60	Fallon/City Unavailable	PR 3

Property Name	General Location (County/Town)	Airspace
Site 24-FA-61	Fallon/City Unavailable	PR 3
Site 24-FA-62	Fallon/City Unavailable	PR 3
Site 24-FA-63	Fallon/City Unavailable	PR 3
Site 24-FA-69	Fallon/City Unavailable	PR 3
Site 24-FA-70	Fallon/City Unavailable	PR 3
Site 24-FA-71	Fallon/City Unavailable	PR 3
Site 24-FA-72	Fallon/City Unavailable	PR 3
Site 24-FA-74	Fallon/City Unavailable	PR 3
Site 24-FA-75	Fallon/City Unavailable	PR 3
Site 24-FA-76	Fallon/City Unavailable	PR 3
Site 24-FA-79	Fallon/City Unavailable	PR 3
Site 24-FA-80	Fallon/City Unavailable	PR 3
Site 24-MC-96	Fallon/City Unavailable	PR 3
Slewfoot	Rosebud/Colstrip	PR 1
Sly Bison Archeological Site THS 79-4	Rosebud/West of Colstrip	PR 1
Spirit Rock Site 24-RB-275	Rosebud/Birney	PR 1
Spring Creek Archeological District	Big Horn/City Unavailable	PR 1
St. Joseph Catholic Church	Big Horn/Hardin	PR 1
Stevens, Dominic, House	Big Horn/Lodge Grass	PR 1
Sullivan Rooming House	Big Horn/Hardin	PR 1
Sullivan, James J. House ³	Big Horn/Hardin	PR 1
Ten Mile Road ²	Powder River	PR 1, Gap A, or PR 2
Three Rock Ring Site 24-RB-229	Rosebud/Ashland	PR 1
Three Strike Site 24-RB-373	Rosebud/Colstrip	PR 1
Timber Bridge South of Ismay	Fallon/Ismay	PR 3
Timi's Shelter	Rosebud/Colstrip	PR 1
Tongue River Dam Homestead	Big Horn	PR 1
Trytten, J.M., House	Big Horn/Lodge Grass	PR 1
Tupper, J.S., House	Big Horn/Hardin	PR 1
Vegamatic Site	Rosebud/Colstrip	PR 1
Wold Barn	Rosebud/ Lame Deer	PR 1
Wolf Mountains Battlefield – Where Big Crow Walked Back and Forth ^{1, 4}	Rosebud/Birney	PR 1
Yellow Leaf Site 24-RB-215	Rosebud/Ashland	PR 1
Yonkee Reservoir Site 24-PR-402	Powder River/City Unavailable	PR 1, Gap A, or PR 2
Young, Alvin, Barn and Cabin Historic District	Big Horn/Busby	PR 1
Young's Creek Archeological District	Big Horn/City Unavailable	PR 1
North Dakota		
Adams County Courthouse	Adams/Hettinger	PR 4
Cannonball Stage Station ²	Grant/near Carson	PR 4
Carson Roller Mill	Grant/ Carson	PR 4
Cedar Creek Bridge	Adams/Hettinger	PR 4
Erickson, Andrew, Barn ³	Adams/Hettinger	PR 4
Evangelisch Lutheraner Dreieinigkei Gemeinde	Grant/New Leipzig	PR 4
Fort Dilts ²	Bowman/Rhame	PR 3
Hettinger County Courthouse	Hettinger/Mott	PR 4
Hope Lutheran Church	Grant/ Elgin	PR 4
H-T Ranch ²	Slope/Amidon	PR 3
Medicine Rock State Historic Site ²	Grant/Heil	PR 4
Mott Rainbow Arch Bridge	Hettinger/Mott	PR 4

Property Name	General Location (County/Town)	Airspace
Mystic Theatre	Slope/Marmarth	PR 3
Neuburg Congregational Church	Hettinger/Mott	PR 4
Schade, Emma Petznick and Otto, House	Bowman/Bowman	PR 3
Stern, John and Fredericka (Roth), Homestead	Hettinger/Mott	PR 4
US Post Office--Hettinger	Adams/Hettinger	PR 4
South Dakota		
Ainsworth, Oliver N., House	Lawrence/Spearfish	Gateway West
Anderson, Rasmus and Elemine, Homestead Ranch ³	Lawrence/St. Onge	Gateway West
Antelope Creek Stage Station	Corson/Morristown	PR 4
Archeological Site No. 39CO39	Corson/Mahto	PR 4
Archeological Site No. 39HN1	Harding/Ludlow	PR 3
Archeological Site No. 39HN121	Harding/Ludlow	PR 3
Archeological Site No. 39HN150	Harding/Ludlow	PR 3
Archeological Site No. 39HN155	Harding/Ludlow	PR 3
Archeological Site No. 39HN159	Harding/Ludlow	PR 3
Archeological Site No. 39HN160	Harding/Ludlow	PR 3
Archeological Site No. 39HN162	Harding/Ludlow	PR 3
Archeological Site No. 39HN165	Harding/Ludlow	PR 3
Archeological Site No. 39HN167	Harding/Ludlow	PR 3
Archeological Site No. 39HN168	Harding/Ludlow	PR 3
Archeological Site No. 39HN17	Harding/Ludlow	PR 3
Archeological Site No. 39HN171	Harding/Ludlow	PR 3
Archeological Site No. 39HN174	Harding/Ludlow	PR 3
Archeological Site No. 39HN177	Harding/Ludlow	PR 3
Archeological Site No. 39HN18	Harding/Ludlow	PR 3
Archeological Site No. 39HN198	Harding/Ludlow	PR 3
Archeological Site No. 39HN199	Harding/Ludlow	PR 3
Archeological Site No. 39HN205	Harding/Ludlow	PR 3
Archeological Site No. 39HN207	Harding/Ludlow	PR 3
Archeological Site No. 39HN208	Harding/Ludlow	PR 3
Archeological Site No. 39HN209	Harding/Ludlow	PR 3
Archeological Site No. 39HN21	Harding/Ludlow	PR 3
Archeological Site No. 39HN210	Harding/Ludlow	PR 3
Archeological Site No. 39HN213	Harding/Ludlow	PR 3
Archeological Site No. 39HN217	Harding/Ludlow	PR 3
Archeological Site No. 39HN218	Harding/Ludlow	PR 3
Archeological Site No. 39HN219	Harding/Ludlow	PR 3
Archeological Site No. 39HN22	Harding/Ludlow	PR 3
Archeological Site No. 39HN227	Harding/Ludlow	PR 3
Archeological Site No. 39HN228	Harding/Ludlow	PR 3
Archeological Site No. 39HN232	Harding/Ludlow	PR 3
Archeological Site No. 39HN234	Harding/Ludlow	PR 3
Archeological Site No. 39HN26	Harding/Ludlow	PR 3
Archeological Site No. 39HN30	Harding/Ludlow	PR 3
Archeological Site No. 39HN484	Harding/Ludlow	PR 3
Archeological Site No. 39HN485	Harding/Ludlow	PR 3
Archeological Site No. 39HN486	Harding/Ludlow	PR 3
Archeological Site No. 39HN487	Harding/Ludlow	PR 3
Archeological Site No. 39HN5	Harding/Ludlow	PR 3

Property Name	General Location (County/Town)	Airspace
Archeological Site No. 39HN50	Harding/Ludlow	PR 3
Archeological Site No. 39HN53	Harding/Ludlow	PR 3
Archeological Site No. 39HN54	Harding/Ludlow	PR 3
Archeological Site No. 39LA165	Lawrence/Deadwood	Gateway West
Archeological Site No. 39LA481	Lawrence/Deadwood	Gateway West
Archeological Site No. 39MD81	Meade/Sturgis	Gateway West
Archeological Site No. 39MD82	Meade/Sturgis	Gateway West
Ashcroft, Thomas, Ranch	Harding/Reva	Gap B
Baker Bungalow	Lawrence/Spearfish	Gateway West
Bartlett, L.L., House	Meade/Stoneville	Gateway West
Bear Butte ^{1,4}	Meade County/Sturgis	Gateway West
Beckon, Donald, Ranch	Meade County/Mud Butte	Gateway East
Belle Fourche Band Shell ³	Butte/Belle Fourche	Gateway West
Belle Fourche Commercial Historic District	Butte/Belle Fourche	Gateway West
Belle Fourche Dam	Butte/Belle Fourche	Gateway West
Belle Fourche Experiment Farm	Butte/Newell	Gateway West
Bethany United Methodist Church	Perkins/Hettinger	Gap C
Black Hills National Cemetery ³	Meade/Sturgis	Gateway West
Blake Ranch House	Harding/Buffalo	PR 2
Bolles, Charles, House	Butte/Belle Fourche	Gateway West
Butte County Courthouse and Historic Jail Building	Butte/Belle Fourche	Gateway West
Butte-Lawrence County Fairgrounds	Butte/Nisland	Gateway West
Carr No. 60 School	Perkins/Lodgepole	PR 4
Carr, Anna, Homestead	Perkins/Bison	PR 4
Central Perkins County Stockyard and Weighing Station	Perkins/Bison	PR 4
Chambers Dugout ³	Butte/Belle Fourche	Gateway West
Cook, Fayette, House	Lawrence/Spearfish	Gateway West
Corbin, James A., House	Lawrence/Spearfish	Gateway West
Court, Henry, House	Lawrence/Spearfish	Gateway West
Dakota Club Library	Meade/Mud Butte	Gateway East
Dakota Tin and Gold Mine	Lawrence/Spearfish	Gateway West
Deadwood Historic District ¹	Lawrence/Deadwood	Gateway West
Dickey, Eleazer C. and Gwinnie, House	Lawrence/Spearfish	Gateway West
Dickey, Walter, House	Lawrence/Spearfish	Gateway West
Ditchrider House	Butte/Nisland	Gateway West
Driskill, William D., House	Lawrence/Spearfish	Gateway West
Duck Creek Lutheran Church and Cemetery	Perkins/Hettinger	Gap C
Emmanuel Lutheran Church and Cemetery	Harding/Ludlow	PR 3
Episcopal Church of All Angels	Lawrence/Spearfish	Gateway West
Erskine School	Meade/Sturgis	Gateway West
First Congregational United Church of Christ ²	Butte/Belle Fourche	Gateway West
Fort Manuel	Corson/McIntosh	PR 4
Fort Meade District	Meade/Fort Meade	Gateway West
Fort Meade Veterans Administration Hospital ³	Meade/Fort Meade	Gateway West
Foster Ranch House	Perkins/Meadow	PR 4

Property Name	General Location (County/Town)	Airspace
Fowler Hotel	Harding/Bufalo	Gap B
Frawley Historic Ranch ¹	Lawrence/Whitewood	Gateway West
Frozenman Stage Station	Meade	Gateway West
Fruitdale School	Butte/Fruitdale	Gateway West
Fruitdale Store	Butte/Fruitdale	Gateway West
Galena School	Lawrence/Deadwood	Gateway West
Gartner, Carl Frederick, Homestead	Butte/Newell	Gateway West
Gay, Thomas Haskins, House	Butte/Belle Fourche	Gateway West
Giannonatti Ranch	Harding/Ludlow	PR 3
Golden Rule Department Store	Perkins/Lemmon	PR 4
Golden Valley Norwegian Lutheran Church	Harding/Ralph	Gap C
Graf, Stephen and Maria, House	Meade/Sturgis	Gateway West
Grand River Stage Station	Corson/Morristown	PR 4
Halloran-Matthews-Brady House	Lawrence/Spearfish	Gateway West
Hardy Guard Station	Lawrence/Lead	Gateway West
Harriman, L. F., House	Perkins/Lemmon	PR 4
Harris, Fred S., House	Butte/Belle Fourche	Gateway West
Hay Creek Bridge	Butte/Belle Fourche	Gateway West
Hewes, Arthur, House	Lawrence/Spearfish	Gateway West
Homestake Mining Company Hydroelectric Plant No. 2 ³	Lawrence/Spearfish	Gateway West
Homestake Workers House	Lawrence/Spearfish	Gateway West
Hoover Store	Butte/Hoover	Gateway West
Hoover, Alexander, House	Butte/Hoover	Gateway West
Immanuel Lutheran Church	Perkins/Mud Butte	Gateway East
Jackson Boulevard Historic District ³	Lawrence/Spearfish	Gateway West
Johnson, Axel, Ranch	Harding/Reva	Gateway East
Johnson, William, House	Butte/Hoover	Gateway West
Juso, Nels Homestead ²	Lawrence/Lead	Gateway West
Keets, Henry, House	Lawrence/Spearfish	Gateway West
Kenaston, William G., House	Butte/Newell	Gateway West
Knight, Webb S., House	Lawrence/Spearfish	Gateway West
Kroll Meat Market and Slaughterhouse	Lawrence/Spearfish	Gateway West
Langdon School	Butte/Nisland	Gateway West
Lead Historic District	Lawrence/Lead	Gateway West
Lemmon Petrified Park	Perkins/Lemmon	PR 4
Lemmon, G. E., House	Perkins/Lemmon	PR 4
Lightning Spring (39HN204)	Harding/Ludlow	Gateway West
Lincoln School	Butte/Belle Fourche	Gateway West
Little Missouri Bank Building	Harding/Camp Crook	PR 2
Livingston, John and Daisy May, Ranch	Harding/Reva	Gateway East
Lown, William Ernest, House	Lawrence/Spearfish	Gateway West
Mail Building, The	Lawrence/Spearfish	Gateway West
McLaughlin Ranch Barn	Lawrence/Spearfish	Gateway West
McMillan, John and Elsie, House ³	Meade/Sturgis	Gateway West
Minnesela Bridge	Butte/Belle Fourche	Gateway West
Mount Theodore Roosevelt Monument	Lawrence/Spearfish	Gateway West
Newell Depot Bridge	Butte/Newell	Gateway West
Newell High School	Butte/Newell	
Old Finnish Lutheran Church	Lawrence/Lead	Gateway West

Property Name	General Location (County/Town)	Airspace
Peace Valley Evangelical Church and Cemetery	Harding/Hettinger	PR 3
Pearson Cabin	Meade/Sturgis	Gateway West
Quamman, Ole, House ³	Perkins/Lemmon	PR 4
Quillian, Thomas, House	Lawrence/Saint Onge	Gateway West
Raskob, Jacob and Elizabeth, Ranch	Meade/Sturgis	Gateway West
Redwater Bridge, Old	Lawrence/Spearfish	Gateway West
Richards Cabins	Meade/Faith	Gateway East
Riley, Almira, House	Lawrence/Spearfish	Gateway West
Rockford No. 40 School	Perkins/Lemmon	PR 4
Roosevelt School ³	Butte/Belle Fourche	Gateway West
Saint Onge State Bank	Lawrence/Saint Onge	Gateway West
Scotney, John Aaron, House	Butte/Belle Fourche	Gateway West
Shevling, L. W., Ranch	Harding/Buffalo	PR 2
Site 39LA150	Lawrence/City Unavailable	Gateway West
Site 39LA177	Lawrence/City Unavailable	Gateway West
Site 39LA247	Lawrence/City Unavailable	Gateway West
Site 39LA257	Lawrence/City Unavailable	Gateway West
Site 39LA259	Lawrence/City Unavailable	Gateway West
Sittner Farm	Perkins/Meadow	PR 4
Small, Charles and Eleanor, House	Butte/Belle Fourche	Gateway West
Snoma Finnish Cemetery	Butte/Belle Fourche	Gateway West
Soper-Behymer Ranch	Butte/Belle Fourche	
Sorum Cooperative Store	Perkins/Lodgepole	Gap C
Sorum Hotel	Harding/Reva	Gateway East
South Dakota Dept. of Transportation Bridge No. 10-109-360	Butte/Belle Fourche	Gateway West
South Dakota Dept. of Transportation Bridge No. 10-270-338	Butte/Newell	Gateway West
South Dakota Dept. of Transportation Bridge No. 47-151-389	Meade/Sturgis	Gateway West
Spearfish City Hall	Lawrence/Spearfish	Gateway West
Spearfish Filling Station	Lawrence/Spearfish	Gateway West
Spearfish Fisheries Center	Lawrence/Spearfish	Gateway West
Spearfish Historic Commercial District	Lawrence/Spearfish	Gateway West
Spearfish Post Office (Old)	Lawrence/Mountain Plains	Gateway West
Spearfish Rest Stop Tipi ³	Lawrence/Spearfish	Gateway West
Spring Creek School	Meade/Mud Butte	Gateway East
St. Lawrence O'Toole Catholic Church	Lawrence/Lead	Gateway West
St. Onge Schoolhouse	Lawrence/Saint Onge	Gateway West
Stokes, Oliver O., House	Harding/Buffalo	PR 2
Stomprude Trail Ruts	Meade	Gateway West
Stonelake Bridge	Butte/Newell	Gateway West
Sturgis City Auditorium ²	Lawrence/Sturgis	Gateway West
Sturgis Commercial Block	Meade/Sturgis	Gateway West
Sturgis High School	Meade/ Sturgis	Gateway West
Sturgis Water Works Company Supply Works Site ³	Meade/ Sturgis	Gateway West
Tallent, Annie, House	Meade/ Sturgis	Gateway West
Thoen Stone and Site ²	Lawrence/Spearfish	Gateway West
Tomahawk Lake Country Club	Lawrence/Deadwood	Gateway West
Toomey House	Lawrence/Spearfish	Gateway West

Property Name	General Location (County/Town)	Airspace
Tri State Bakery	Butte/Belle Fourche	Gateway West
Tubbs, Poker Alice, House	Meade/Sturgis	Gateway West
Uhlig, Otto L., House	Lawrence/Spearfish	Gateway West
Vale Bridge	Butte/Newell	Gateway West
Vale Cut Off Belle Fourche River Bridge	Butte/Belle Fourche	Gateway West
Vale School	Butte/Vale	Gateway West
Veal, Thomas J., Ranch	Perkins/Meadow	PR 4
Vessey School	Harding/Ludlow	PR 3
Viken, Nicholas Augustus, Homestead	Butte/Newell	Gateway West
Vorhees Ranch ²	Lawrence/Whitewood vicinity	Gateway West
Walsh Barn	Butte/Spearfish	Gateway West
Walton Ranch	Lawrence/Spearfish	Gateway West
Wenke, John G., House	Meade/Sturgis	Gateway West
Whitewood Historic District	Lawrence/Whitewood	Gateway West
Whitney, Mary, House	Lawrence/Spearfish	Gateway West
Wide Awake Grocery Building	Butte/Belle Fourche	Gateway West
William Holst Farmstead ²	Lawrence/Vale vicinity	Gateway West
Wolzmuth, John, House	Lawrence/Spearfish	Gateway West
Woodmen Hall	Lawrence/Saint Onge	Gateway West
Wyoming		
Arch Creek Petroglyphs (48CK41)	Crook/Moorcroft	Gateway West
Basin Oil Field Tipi Rings 48CA1667	Campbell	PR 1, Gap A or PR 2
Bishop Road Site 48CA1612	Campbell	PR 1, Gap A or PR 2
DXN Bridge over Missouri River	Crook/Hulett	PR 2
EBF Bridge over Powder River	Sheridan/Arvada	PR 1
Entrance Road--Devils Tower National Monument	Crook/Devils Tower	Gateway West
Entrance Station--Devils Tower National Monument	Crook/Devils Tower	Gateway West
Gillette Post Office	Crook/Moorcroft	Gateway West
Inyan Kara Mountain ⁴	Crook/Sundance	Gateway West
McKean Archeological Site (48CK7)	Crook/Moorcroft	Gateway West
Nine Mile Segment, Bozeman Trail 48CA264	Campbell	Gateway West
Old Headquarters Area Historic District	Crook/Devils Tower	Gateway West
Ranch A	Crook/Beulah	Gateway West
Rochelle Archeological District	Campbell/City Unavailable	Gateway West
Sundance School	Crook/Sundance	Gateway West
Sundance State Bank	Crook/Sundance	Gateway West
Tower Ladder--Devils Tower National Monument ⁴	Crook/Devils Tower	Gateway West
Unnamed 1 ⁴	North of Gillette	Gateway West
Unnamed 2 ⁴	Northwest of Hulett	PR 2
Vore Buffalo Jump	Crook/Sundance	Gateway West
Wyoming Mercantile	Crook/Aladdin	Gateway West

Notes: ¹Property is also an NHL

²Property in State Register

³Property new to NRHP (eligible or listed) since 2014

⁴Property is a TCP

Table A-1 Historic Properties Sources

- Montana Historical Society. 2018. Montana State-owned Heritage Properties by County. Available online: <https://mhs.mt.gov/Shpo/docs/PropertiesListCounty.pdf>. Accessed 29 October 2025.
- National Park Service (NPS). 2025a. National Register of Historic Places. Available online: <https://www.nps.gov/subjects/nationalregister/database-research.htm>. Last updated 5 August 2025. Accessed on 22 October 2025.
- NPS. 2025b. National Historic Landmarks. Available online: <https://www.nps.gov/subjects/nationalhistoriclandmarks/list-of-nhls-by-state.htm>. Last updated 30 September 2025. Accessed on 22 October 2025.
- NPS. 2025c. National Historic Monuments. Available online: <https://www.nps.gov/subjects/archeology/national-monument-facts-and-figures.htm>. Last updated 22 January 2025. Accessed on 5 November 2025.
- South Dakota Historical Society. 2024. State Register of Historic Places. Available online: https://history.sd.gov/preservation/docs/SRHP_Master%20List.pdf. Last updated December 2024. Accessed 29 October 2025.
- State Historical Society of North Dakota. 2025. ND State Historic Sites Registry. Available online: <https://www.history.nd.gov/hp/shsregistry.html>. Accessed 29 October 2025.